Introduction

How correct was the observation of Alex Wayman when he wrote in a foreword (1987) to B.N. Puri's *Buddhism in Central Asia*, "Central Asia is still an enormously important area of the world in a political sense, its vitality unabated" We had not to wait any longer to see the Central Asia emerging from its ashes. Today it is claiming all attention from the world powers and making regulations and necessary arrangements to receive foreign investors in a big way. But Central Asia has a past, for most part of its history, well documented, from which stem its present strength, mental make-up and behavioural patterns. No justice could be done to a study of Central Asia by ignoring its past. It is known as a breeding ground of various races and a cradle of many civilizations. The makers of Central Asia spread, waves after waves negotiating barriers of water and mountains, braving unfriendly terrains and unfavourable weather conditions, claiming lands and recognition from well established cultures and civilizations around. Many of these civilizations and political establishments which had to deal with these nomads were left licking their injuries and counting casualties. The Scythians Tokharians, Hiaung-nu, Wasun and Yue-Chie kept Empires like China on the East and Persia on the West constantly engaged. Chinese could think nothing better than to construct a wall to ward off these unpredictable wanderers on horses. Achaemenian rulers of Persia found themselves, always at the receiving end in their campaigns against them. Nomads, hardly at peace with each other, were constantly under pressure and resultant pressures were eased out towards the South with eventual crossing of Hindu Kush, which subsequently affected significant racial, cultural and political changes in the subcontinent.

In the length and breadth of Central Asia the pastoral nomads lived with the sedentary populace in a sort of symbiosis. The relations between the two occasionally grew bitter. In such cases nomads had the upperhand. There were many confederacies established by nomads to manage their affairs and accumulate sufficient strength to deal with their opponents; there were many more city-states which left behind a record of their cultural and economic achievements in the shape of metallic and non-metallic implements, inscriptions and burial remains. The two major races of the world, the Caucasian and the Mongoloid had their early development here. The Caucasian race is associated with a linguistic family, known variously as Indo-European, Indo-Germanic or Aryan language stock. Most of the languages of Asia and Europe are the off shoots of this primitive language stock. The paper in this volume, "*The Nomads of Central Asia*" deals with the rise and spread of nomadic power in time and space, their encounters with most powerful empires of the time on their East and West and about the internecine wars which caused nomadic incursions into neighbouring lands changing eventually their socio-political scenario. Nomads established their empires and were at times, entrusted with the safe conduct of caravans passing through their lands. Silk route being one of the essential basis of their economy. The history of nomadic empires does not stop with the fall of these lands to Islam. Medieval period is the climax of their political and cultural expansion. Successive empires were established from China to Black Sea and Volga to India by the Central Asian tribes, who commanded respect and reverence from the powers that came in contact with them and went to instill among their opponents a feeling of awe. Turkish generals become more numerous in the court and army of the kings of Kashmiri as they are conspicuous in the court of Khalifa's and Roman Straps. These Turkish generals and their descendents were destined to establish or cause to establish Turkish dominated empires. During this period even the most strong empires on the map thought it proper to cultivate Central Asian relations. *The Mughal Relations with Central Asia* by Prof. A. Rahim captures and emphasizes the salient features of

Mughal policy towards Central Asia. The paper recounts the achievements and failures of Mughal ambitions and designs in the context of their Central Asian policy. The Turks, who had by then, firmly established themselves as the masters of Central Asia, hardly exhibited the tendencies of religious fanaticism - as is generally given to understand. They had expansionist designs like their Kins in India. They were liberal like Mughals in India but wanted unconditional submission from their subjects and recognition from their opponents. They were great patrons of art and literature as were their Scythain and Kushan predecessors. The missionaries from Central Asia took the message and teachings of Islam to far off lands and won the converts by share persuasion and by their exemplary behaviour. Prof. A.M. Mattoo speaks about these features of Central Asian polity in his paper *Men and Movements.* As in India so in Central Asia Islam played an vital role in the unification of diverse nationalities. It provided them an ideology to bury their ethnic differences. Though this sense of unity and strength was soon lost through the interests of its political opportunists and more ambitious fortune seekers yet its relevance in the Central Asian context has not wholly lost. It may be of some help to them in future, after of course containing their economic depressions and creating viable political systems comparable to their social needs, to foster a sort of confederation on the pattern of an European Block. But this dream of a few Central Asian scholars has to sustain and pass through the night mares of ethnic cross pulling and Soviet legacies and economic mess.

The Central Asian philosophers like Abu Nasr Farabi, Avi Sina, Sahikh Shihabu-Din Maqtul, scientists like Abu-Bakr Razi, Ibn Umail, al Khawanrazmi; physicians like Ali al-Tabari, al Razi, Avi Sina, Ibn al Baitar, mathematicians like Umar Khayam, Ibn Khujandi; scholars like Nasir-u-Din Tusi, Kamal-u-Din Farsi, Qutab-u-Din Shirazi, Rudki, Said Abu'l Khair and Nasir Khasraw contributed in a significant way to the quality and quantity of sciences during Islamic period. Not only were Greek works translated from their originals or Syriac versions but new discoveries and fresh observations were also recorded. Prof. Erwin I. J. Rosenthal, the well known Orientalist treats in detail the political philosophy of al-Farabi drawing profitable comparisons with the platonic theory of state and state craft in his paper *The Place of Politics in the Philosophy* *of al-Farabi*. The section has two more papers on *The Theory of Knowledge of al-Farabi* and *Concept of Matter in the Philosophy of al-Razi*. The underlying theme of these two papers is the concept of change which makes the two philosophers, al-Farabi and al-Razi, stand aloof from the rest of their class. Dr. Mittals paper *The Problem of Squaring the Circle and Iranian Contribution*, to it deserved inclusion on the grounds that it records the efforts of individual mathematicians belonging to different times, regions and creeds to attempt solutions of a problem for pure love of knowledge which belongs to whole of mankind.

Zoroastrianism, Buddhism and Islam are the religions of a settled society with an organized system and institutions, doing away with clan loyalties, though incorporating such conventions and traditions of previous societies as are not harmful to their basic tenets. All the three religions flourished there and found some of their best protagonists who helped in the composition formulation and propagation of philosophical, ethical and legal niceties of their respective faiths. But the Central Asian Society has kept its affined character intact, for most part of their history they have been governed by their tribal loyalties. Russians who wanted to keep them segregated and divided for political reasons further compartmentalized them on these lines. The present political regimes are trying to foster a semblance of unity among the diverse ethnic groups within their respective states. Save a few ethnic skirmishes and protests, people are generally following a policy of restrain. The flight of Zoroastrian believers from Iran and adjoining lands on the fall of Yezd gard's (632 - 650 A.D.) Iran and subsequent conversions to Islam and closing down of fire temples by the adherents of new faith is generally exaggerated. An impression is created as if advent of Islam was nothing short of devastation and ruin. Dr. Tirmidi belies these notions and sifts and analyses Persio-Arabic literature to show the locations and significance of these fire temples in Iran and adjoining lands during 10/11th centuries which was luckily the golden period in the Central Asian history. There are even today a sizeable number of Zoroastrian believers in Central Asia who are in-contact with their Parsi brethren in India and Zoroastrians in Iran. Dr. Tirmidi's paper *Zoroastrian and their fire temples in Iran and adjoining countries from the 9th to 14th centuries as Gleaned from the Arabic Geographical works* is preceded by a paper on *Man, Evil and*

Ahura Mazda, which studies Zoroastrianism as an ethical system.

The present volume offers a study of Central Asia in its historical perspective. Most of the papers are presented for the first time. The inclusion of a few papers like, *The History and Evolution of the Dome in Persia, Mehrab and Wooden structures of Kafirstan* was made essential by our desire to go again through the history of development of Art and Architecture during medieval times. The treatment of these subjects by the eminent scholars like K. A. C. Creswell, R. B. Serjeant and Rolf Henkel will be beneficial to both expert in the field and general readers.

Today, the people of Central Asia are united through their interests in the respective system of their states, which they hope shall deliver them from their present plight and economic mess. Once their hopes are belied, there are sure going to arise new alignment on ethnic and tribal lines. For the present the respective states are treading cautiously towards democratization and economic liberalism. The present economic position of Central Asian States can well be gleaned from the Study of *Emerging Exchanging Arrangements of Central Asian Republics* written by Prof. Dost Mohammad and Dr. A.S. Bhat. The paper analyses the causes and consequences of the emergence of ruble zone following the disintegration of Soviet Russia in late 1991. It also analyses the present flexible exchange arrangements of CARs following the collapse of ruble zone in mid 1993. There is also a paper *Uzbek Agriculture Needs Diversification* by Dr. Mohammad Afzal Mir on Uzbekistan which deals with the developmental prospects of the area in the light of its economic potentials, absence of skilled labour and transformation costs.

The story of Central Asia does not end here. It has much more to offer than meets the eye. It is a nation with many states and many more nationalities which have more intimately connected histories and mutually shared achievements and failures. They have much more to share in between. They have, yet to develop horizontal lines for trade and commerce as they are still engaged in building foreign reserves, and corresponding infra structure. The individual states are reacting favourably to the concept of mutual cooperation and sharing of each others resources on the conditions which are yet to be worked out. Dr. G. M. Mir's paper

Emerging Central Asian Issues - the Geographical Agenda. Tribes to lay bare some of the issues emerging from Central Asian geograpnical predicament. For the present economic interests are foremost on the minds of respective rulers as it is the only genuine unifying factor within a state. What Central Asian states need today is political stability, sustained economic growth, and recognition of their cultural identity.

Gulshan Majeed

Men and Movements

Trade Routes have played a vital role in the transmission of men, movements, ideologies and technologies from one region to another till the advent of modern scientific discoveries and inventions in the field of communication. The modern discoveries like Radio, Wireless and telecommunication have shortened the distance and the movements are faster. The advancement of the science and its application in the field of computer and television has revolutionised the human behaviour. But the geographical proximity and trade routes in any case have not lost the significance. The physical transportation is yet through these routes. The control over the network of trade routes whether overland or sea signifies the authority. As long as the Arabs had hegemony over the seas, they were dictating terms to then known world but once the Europeans turned to be the lords of the seas the rest of the Nations were left with no alternative but to become colonies.

Since Turkistan was land locked the land routes were criss crossing the entire region. On account of the Chinese supremacy on silk, the textured stuff was carried through these routes to Rome in Europe. Hence given the name of Silk Route. The subsidiary routes were connected with the main route, and a network of trade routes, therefore resulted in the growth and development of several urban centres. These urban centres in the course of time emerged as centres of excellence, and a common cultural trend came into existence.

One of the three major overland routes passed through Kashmir, therefore, the process of urbanisation, in the Central Asian style and subsequent Islamisation of the region at the hands of Turkistanis continued over a period of time.

The formation of Central Asian civilisation was not a freak of history but over a period of time,almost a thousand years, even if computed from the Arab advances into the Caucasion region and Turkistan. Despite very strong cultural traditions the Arab or the Muslim influence started re-shaping the cultural pattern of the peoples of Turkistan.

The Persian advances during the Abaside rule, the Saljuks and Sassanides, revolutionised the Central Asia and culminated into an magnificient Trans Oxian Civilisation. This civilisation inhabited three distinct traditions i.e. the Mongol tradition, the Confucian tradition and Pan-Islamic tradition. Subsequently, successors of Chengiz Khan became instrumental in the spread of Islam in distant regions. Prior to the Mongol supremacy, the Muezzi Maliks of Turkistan had already laid the foundations of Muslim Rule in India consequent upon the Mahmmuds invasions. The epoch in Indian history is called the Sultanate period which was followed by the Afghans and the Mughals. However, the case of Kashmir was some how unique in the way that despite close geographical proximity and commercial contacts, Islam was introduced at a late stage and it was in 1339 A.D. That the Shah Mir Dynasty laid the foundation of the Sultanate. But, the process of Islamisation was so quick that within half a century, the Kashmir turned to be a Muslim majority kingdom.

Kashmir in its essence was a distinct civilisation with strong Zoroastrian Vedic and Shavite traditions combined with the Buddhist traditions. The intense commercial, social, and cultural contacts with the Turkistan has pulvarised the ground and the Zulchu abortive conquest struck the last nail and paved the way for major influx of the ulema from Turkistan, and thereby the speedy transformation of Kashmir.

The Sultanate collapsed under the heavyweight of the Mughals who annexed Kashmir to their Indian Empire in 1586. the salubrious climate of Kashmir was identical with the home land of the Mughals and quite conducive for the layout of the gardens. The Mughals, soon after annexation, initiated the development of the gardens and orchards around the lakes and springs, on the slopes of the hills and enroute to their capital city, Delhi. Besides, they developed the road communication and constructed scores of *Sarais* all along the so called Mughal Road. The Sarai architecture was in its own way a unique pattern. The garden architecture also was in its own right a destinct feature. The Mughal garden architecture was bearing the Islamic influence of the Morroco and Fez garden architecture.

Central Asia excelled in all kinds of fine arts and Kashmir had her own Share. The Sultans deputed artisans to learn the arts and crafts of Central Asia which they introduced in the kingdom of Kashmir. The Kashmiris had golden hands in fine work, so with their innovations they refined the arts and crafts and won laurels all-over world.

The Muslim educational system alongwith the Persian language, evolved over a period of time, found its way to Kashmir, and the Kashmiri's excelled in the language to the extent that the Kingdom was called minicure Iran (ایران صغیر). The spoken native language underwent a sea of change. The Persian, Arabic, Tajik, Uzbek and Turkic words were adopted and the Kashmiri language was enriched.

The transmission was not confined to art, architecture, language and literature, educational system, Sufi Religion and Sufi thought only but technology regarding persian wheel, grain husking looms of varied sizes, Bridge building, paper making, textile production, gun foundries, copper utensil manufacturing, stone works and so on and so forth also found its way to Kashmir.

The history of Kashmir testifies the facts. It was a continuous process, hence it is very difficult to pin point the exact day and date of the transmission.

Mirza Haidar Daughlat, the author of *Tarikhe-Rashidi* testifies in the book that the arts and crafts and architecture, were flourishing and excelled in their texture and shine even before the Mughal conquest of Kashmir. Mirza Haidar, entered Kashmir in 1530 and ruled Kashmir for a brief period. He again came to Kashmir in 1540 to rule over it for ten long years.

As far as the transfer of ideas and movements is concerned, the Sufi Schools of thought introduced by the Ulema, the Missionaries, the scholars and Sufis are still flourishing and govern the Pysche of the people. The greater tradition found its expression in Reshi School of thought of Kashmir at the hands of Sheikh Noor-ud-Din the patron saint of Kashmir. It is true that the Sufi movement was universal in the Muslim World, but it flourished quite significantly in the land of Turkistan. The Naqashbandi order of Sufism, evolved, developed and attained maturity in the land of Turkistan. The *silsilah* was introduced in India during the Mughals.

Prof. A.M. Mattoo

NOMADS OF CENTRAL ASIA

From Pre-History to Ist B.C.

Gulshan Majeed

Central Asia[1], the steppe land mass interspersed with deserts and mountain ranges, and extending from eastern shores of the Caspian sea in the west to the Khigan mountains (in Manchuria) in the east, came under the occupation of various racial groups, at varying levels of their cultural advancement[2]. The material culture left behind by them though very scanty and with yawning gaps (save the Islamic period) is yet very significant and takes us down the lanes of history deep into the proto history[3] of the region under study. The material thus preserved helps us trace their identities and relevant cultural affinities with a little more authenticity. The archaeological finds from Karatua and Lakhuti paint a picture quite in variance with the physiography of present day Tajkistan[3]. The tools which belong to a period extending from 130,000 to 350,000[4] years comprise scrapers, side choppers, cores and flakes and points "still retaining their cortex. Acheulian hand axes have been found in Central Asia[5]. It was at Borykazghan and Tanir Kazghan, the two cultural sites in southern Kazakhistan, that the earliest stage of stone age culture of Central Asia was discovered. The implements found at these places are made of pebbles and are of choping type, roughly cut and covered with patina[6]. There are also discodial covers and handaxes. The pebble tool type have also been discovered in the Pamirs[7]. These finds stand in close proximity to the Soan valley culture of Pakistan[8]. The Sanghao cave collection tools resemble the stone industry at Tashik Tash (Uzbekistan)[9]. The Kara Bura[10] (Tajkistan) implements have traits similar to Late Soan B finds. Zhar-Khutan, Karai Kom and Sami Ganj provide us with *Levalloiso Mousterian* tool types[11]. They are also found at To sor, Tom Chi su, Aman Kutan, Khoja Kent, and Obi Rahmit[12].

The finds at Tashik Tash cave dwelling confirm and support the present day climate of the region-which is alpine, scrub forest type[13]. Tools belong to levallois type. In spite of this Levalloiso-Mousterian[14] tool types associated with neantherthaloid remains the man's presence in Kazakhistan is not attested by other necessary evidence before 30,000 years[15]. Soan type chopper like industry from Central Asian sites may make us believe in the advent of man on the steppe corridor much before the supposed time that is 40,000[16] years which is generally considered authentic. But the other evidences are lacking in this case also. However the fusion of Siberian and East Asean tradition might have occured much before- giving rise to cranial vault called mongoloid[17]. The aurignacoid projectile point industry is attested for lake Baikal in Kazakhistan around 13,000 BC. Aurignacian tools[18], comprise large numbers of blade tools, bone points with split bases and well carved figurines[19]. Samagan river valley finds include side scrupers and patinated flak tools[20].

The dates for Siberian upper palaeolithic assemblage for Uzbekistan is given as 13,000- 10,000 BC[21].

The mesolithic Central Asia (6,000 BC)[22] has features which could well be identified with the site types of Dan-Dam Kailiu cave and Hodja-Su I[23]. The Caspian group of caves could similarly be compared with the seventh millennuim finds of Zarzian (Kurdistan)[24].

"There are paintings in the Shakhta cave showing dogs assisting in the hunt. The absence of sickle blades and domestic plants suggest a stage prior to that of the earliest Jeitun[25] (Late Neolithic of Turkistan) and a technology less sophisticated than that of contemporary sites of the Zagros group such as Jarmo and Tepe Geyan. Again there is a lack of skeletal material, but probably genetic ties were closest to the population of Anatolia and the Caspian Area[25].

The Neolithic culture arrives in Central Asia, as elsewhere, with the introduction of two basic activities of all subsequent higher civilizations[26]: Farming and stock breeding[27]. There are four main type sites of this culture in Central Asia[28]

(a) **Jeitun type site[29].**

Period	6,000 BC.
Distribution	South Turkemania-Anou[30] near Ashkabad.
Cereals[31]	Wheat, barley, spindle whorts
Animals[32]	Cattle, sheep, pig,
Pottery[33]	Geometric painted pottery, Daubed wattle structures, hand made, occasionaly reddish brown with creamish background.
Bone implements:	Needles etc.

Stone flint industry-axes, querns.

(b) **Louilan type site[34].**

Period	6,000 BC
Distribution	Tarim basin and Lop Nor desert
Pottery	hand made-Grey and back
Stone implements	Adzes, ground stone axes blades including fluted cores.

(c) **Keltiminar type site[35].**

Period	3,000
Distribution	near Aral Sea - Kazakistan[36]
Cereals	
Pottery	hand made occasionally incised and stamped decoration.
Stone Industry	Chust microliths

(d) **Gissar type site[37]:**

Period	3,000 BC
Distribution	Tajkistan, Uzbekistan,
Stone implements	Micro Liths with fluted cores, ground stone axes;
Bone Impliments	Crescent shaped sickles bone impliments.

Bronze age[38] culture is an extention of Neolithic culture[39]. Late Neolithic periods may silently merge in to early bronze age[40] like the one at Anau[41] in Turkemenistan. Some important sites of this culture in Central Asia are[42].

(a) **Taza bagyab and Karakum culture**[43]
Period 1500 —— 500 BC.
Burials from Tajkistan
Grey ware made on potters wheel
Bronze daggers, Knives, mirrors stone and bone arrow.

(b) **Chust culture of Farghana**[44] **valley**
Period 1100 —— 750 BC
Occurence of Iron
Use of hand made pottery (it has a supposed similarity with chalcolithic cultur of Cental Asia)

(c) **Namazga V**[45] **south Turkemenia**
Period 2100 BC.
Seal showing a triple headed beast Ivory sticks with incised circles on the sides solid wheels of terracota toy-carts.
Bronze flate dagger blades[46]

Anau (Turkemenistan) is again important for the study of Bronze age culture of the region. The contents were laid bare through its three layers[47]. The bottom layer as has already been shown, spilled out the neolithic contents; the IInd layer contained monochrome pottery flint sickles and door sockits, goat camel and dog remains; the 3rd level contained Bronze or copper sickles[48]; speares, stampe seals; potters wheel; pottery figurines of women or animals.

The mention of the burial mounds[50] found between Irtish and Orkhon[51] rivers have some more visible Scythian affinities. Bronze age of the region has been divided in three periods; the 3rd period commences with 500 BC. Contacts with Scythic art are conspicous in a dagger with heart shaped guard. These burial places are known as kargans[52].

The Bronze age of Central Asia[53] has largely the Scythic characteristics[54] and thus put this civilization (Scythic) on a firm footing[55]. The bronze making centres of western Central Asia are attested for Caucasia and Urartu (Armenia)[56]. Among the bronze age animals who were domesticated, horse became most important for his strength, swiftness, and for understanding his master with quick reflexes. Though the horse bones, as found at Anau, are assumed to be wild even as late as 4,000 BC[57], yet it is a general belief that the horse was broken and bred in inner Asia probably in Turkistan. There are many examples of Scythic art belonging to 600 BC[58], that depict galloping[59] horse postures (early Siberian), "animal motif decorative art associated with horse riding and the use of eloborate wheel based, yurt like mobile dwellings" belonging to Scytho Sarmatians of the steppes[60].

The discovery of artifacts belonging to different periods of History and proto history when studied in comparison with the finds from the same culture types from Africa, Europe, West Asia, China and India (Subcontinent) help to trace the movement of early man and his cultural affinities in time and space. The earlier people, who loomed large on the map in perpetual hostility to each other, were pastoral nomads, a mode of living corresponding to the ecological factors of their habitat[61]. Most part of their lives passed on the horseback which provided the main support to their economy. The steppe sustained them and kept them engaged at a level and upto a measure only[62]. Thus the resultant pressures of their economy, less benevolent natural forces and the inter-tribal feuds had to be got released either by staying back and/or fighting the pressures out or by leaving the place in the hope of finding themselves new grazing grounds for a relatively comfortable stay[63]. The nomads, whom we come across at different stages of the history of the region descended upon one or the other settlement at their own appointed time. The commotions so caused surged through the main lands reaching peripheries and affecting significant changes in the regions coming under its sway[64]. The settled population feared them most[65]. The expeditions to subjugate them could hardly achieve the desired results in the face of the swiftness of their legs and manoeuvrability on a difficult terrain[66]. One such commotion got going in the seventh century BC[67]. It is associated with a nomadic tribe whom Pliny[68] locates beyond Jaxartes. Strabo, on the authority of the historiographers of Hellenes knew these people living near eastern shores of Caspain Sea as Sakas and Massagatie[69]. To-maschek calls Massagaties fish eaters[70] which is contested by Christensen who explains the name as: massagate- mas-sakata - which means great Sakas, thus identifying them as one of the major tribes of Sakas[71]. They are also known as marsh Sakas. Okladinkov identifies Massagatei tribe with the Yue Chieh and also associates them with Pazaryk[72] tribal chief burials excavated by Rodenko in 1928. These human remains belonging to the Tagarian period (1000-100 BC) are embalmed and Tattooed[73]. They posses European features[74] while their dress and horse trappings are Scytho-Sarsmatians. But Okladinkov equates them with Yue Chieh[75].

Massagatei's[76] are said to form the core of the original inhabitants of the Kara-Kalpak Oasis settlement[77]. They were a confederacy of people, less ethnic than political in nature[78]. They had established their own kind of sovereignty beyond the Northern frontiers of Iran[79]. In the 2nd millenium BC they shared the parts of interior Asia[80] with Yue Chieh, Wasun, Cimmerians and Issedones. It is the last mentioned nomad tribe who is said to have pushed out Scythians from their Central Asian habitat[81]. This series of incursions began about 700 BC; the Scyths moving southward into the Lands under Iranian suzerainty, Cyaxerxes driving them out, after receiving initial reverses, back into Ukrain[82]. In the early seventh century BC they are seen roaming around Kopet Dagh and Paropamisus range[83].

Sakas, as is evidenced by the Naqsh-i-Rustum[84], were divided in many tribes[85], whose presence is attested by Herodotus[86] as far as Central Europe. These tribes living in a loose confederacy occupied different parts of the steppe zone. Some of the major settlements associated with Scytho-Sakians during seventh-fifth centuries were[87]:

1. Samarkand Oasis on the Kashka river
2. Bukhara Oasis on the Zarfshan river.
3. Farghana valley (All the three are known as Sogdians)
4. Around Khiva and lower oxus (Called Chorasmians)
5. Settlement around Balk (Called Bactrians)

The Sakas of these settlements formed part of the Iranian army which invaded Greece in 480 BC[89]. The language of these settlement people was Iranic, they were semi-nomadic with agriculture as their main occupation. Chorasmians had their villages fortified[90] and had developed canal system for irrigation[91]. The Scythians, who occupied Central Asian steppes during this period were known to Achaemenians as Sakas[92]. The Inscription of Darus mentions the individual tribes of *Haumvarge*[93], *Tigra Khauda, Tara darya*. There is also *Saaca raucae* who emerge to prominence in the post Achaemenian Iran[94].

The names of the tribes are very significant; all are compound names and indicate a custom or a habit or a habitat of the tribe concerned. In *Haumvarga* it is *hauma* - the sacred juice[95], much revered by the Zoroastrians and *varga* - the sect (etymologically close to Persian *barg* the leaf or Kashmiri varga (the section) or adoration[96] [in this case etymologically close to Khotanese aurga meaning cult or homage]. *Tigra Khuada*, i.e. *Tigra* + *Khauda*, Tigra [close to Kashmiri *Tigre* - the point or hill lock and *Khauda* - the depression, etymologically nearer to-*khud* (or a word akin to it)] known to Achaemenians as people with pointed caps[97]. *Tara darya* the people who live beyond the river [*Tar* in Kashmiri means way to opposite bank of the river][98].

Herodotus, whose information regarding these people has since been confirmed[99] by the archaeological and other sources gives a tripartite[100] division of the Sakas which follows the general tripartite division of the society recommended by Zoroastrian literature[101]. He mentions: Royal Scythians, who lived in the steppes of the Don, nomad Scythians occupying steppes of Dneiper, and sedentary Scythians who blonged to two categories, (a) Farming Scythians and the Scythian tillers of the land[102]. Beneviste and Dumezil reproduce a Scythian legend which further authenticates Herodotus' comments. The legend is about some celestial objects made of Gold which descend on the Scythian land and are shared by the members of the society as per their social functions, which are plough and yoke (i.e. farming) axe (that is valour and challic. (it confers royal glory)[103]. Royal Scythians considered all other scythian as their slaves[104].

The cultural history of Sakes could well be gleaned from the archaeological reports[105] on the basis of excavations conducted in southern Russia and parts of Central Asia and also from historical reports of Greeks who call them Scythians, Chinese who know them as *Sai* or *Sak* and Iranians who mention them as Sakas[106].

The Scythian burial sites provide a wealth of information regarding their social life, religion and customs and weaponary: Arrows, spears and swords formed an essential part of their burial practice[107]. The dead body of the king, coated with the wax was laid to rest on couch inside his tomb; spears were planted on his sides and over them were fitted wooden planks to form the roof. In the open space beside the couch were buried his concubines, groom, close aides, messengers, a cook, his cup bearer, horse and golden cups as *mobilier funeraire*. By the practices associated with the burial it becomes clear that Scythians believed in the life after death[108]

Excavation at a Kuban[109] site has salvaged for posteriority a golden plaque[110] which depicts on one of its faces, the sun god on his chariot and a female diety probably the goddess of the earth- *Apia* (etymologically nearer to apa of Indo Aryan Languages), who has a husband in the sky god known as *Papaios* (meaning the father). A burial mound supposed to belong to a member of a royal class has well preserved textiles including[111] world's oldest pile carpet, decorated with a centre square field filled with rosettes and borders enclosing processions of elk, horsemen and griffins.........locally made felt cut outs, were also present, showing animal combats in full vigour[112].

With the emergence of more powerful nomadic confederacies in the far eastern Turkistan and the Oxiana steppes, the Scythians retreated to their orginal habitate, the eastern Europe[114], where they eventually created the "first independent state of its kind[115]. And those of the Sakas who moved down the south went on establishing their own little settlements or getting assimilated with other cultural/ethnic groups of the times. The Scythian who thus, stayed back in the parts of the Central Asia came to be known as eastern Sakas[116] forming their own alliances in due course of time[117].

By 500 BC Sakas came to occupy the borders of western Mongolia[118]. Where Hiaungnu confederacy started taking shape in the Zungharia[119] and western Mongolia. At that period of time Yue-Chieh-Tocharians's were in Yumen - (Ordos area of eastern Sinking[120]) and Ning Shia forming their own confederacy. There were other settlements belonging to Indo-European[121] speaking people which remained effective as Oasis city states[122]. The inter and intra tribal feuds were the way of the life; survival of the fittest was the rule, least fortunate ones being pushed to the edge[123]. The country of Yue-Chieh[124] comprised *Liang chou, kanchou, suchao, Kaua chao* and *shachou.*

Hsiung-nu[125] as their name signifies were nomads[125] and are often referred to as Hun's[126] or generalized Altaic[127]. They exist under the name of Hsiun-you[128] during earlier periods. Theirs was the first nomadic empire of Asia[129]. Hsuing-nu are more known for their ruthlessness. With a well developed cavalry under their command they could overcome their opponents with comfortable ease and treat them with utter devastation. The main warring tribes of the period were, Sakas, Yue-Chih, Hsiung-nu and Wasun who were busy on the other side of the Turkistan where they had formed their own type of confederacies[130], that Macadonian warrior, Alexander, who had earlier burnt to ashes the great treasury of knowledge, the library at Persepolis[131] and had subdued Iranians was finding it easy to pocket Trans Oxian cities and beyond. But it is on record that no Cyrus[132] could survive beyond this and no Darius[133] returned triumphant and Alexander was made to content himself with the siezure of Sogdiana, between Oxus and Jaxartes, and Bactria[134], which formed part of ancient Tahia, as known to Chinese chroniclers. But the different Alexandrian forts fell soon ofter his death[135]. Seleucide kingdom which emerged on the exploits of Alexander could hardly measure to the growing power of the nomads. Nomadic incursions into Greek territories of the east went on unabatted[136]. Margiana and Aria had to face an invasion by nomads (290/280)[137] which was however repelled. These cities were latter on rebuilt and baptised as Antioch and Achaea by Antioch I[138](280-261 BC). A 160 Km long wall had to be got erected to ward off nomadic menace from Merve[139]. But all these measures proved short lived and could not save Seleucides who were shaking under internal dissension[140] and Achaemerian way of governance through satrapies. Satrapies often grew too impatient to dispense with their rulers without much irritations. These revolts relieved Seleucides of much of their eastern engagements. Bactria the important state which held key to most of the Central Asian provinces proclaimed its independence under its satrap Diododus in 256 BC. The rebellion of Diododus against Seleucides was the expression of nationalistic aspirations of the people of *Sogdiana and Bactria*[142], who under their nobility rallied behind the more opportunistic satrapy to help form the Greeko-Bactrian kingdom[143] (Three years latter Parthia was claimed by Arsacides)[144]. Bactria was strategically while from Margiane they were expelled by Parthains who subsequently were removed by Yeu-Chieh during their ascendency to power and supremacy in Central Asia and India. Sakas captured Indus in 128 BC[176]. These Sakas were known to Indian chroniclers as Indo Scythians[177]. Mues was the first to establish a Saka empire on the Indian soil at the expense of Indo Bactrian kingdom at Taxila[178]. But this short lived sajourn with power came to an abrupt end when Greeks under Apollodotus put these Sakas on the heels.

Sakas were the relentless fighters. They were swift on their legs; known also as nomads on horses . Thus defeat or expulsion from any one place never meant that they would not strike some where else or come back to take their revenge. Thus Sakas, soon came to occupy Arochosia (Drangiana being already under their sway), and started their fresh campaigns against Texila which bore fruit under Azes I who commemorates his victory over Greeks (57 BC) by the establishment of his own era the era of Azes.

Refrences and Notes:

1. The region has variously been called, Inner Asia (Stein) Heart of Asia (Skrine) and Central Asia, the last mentioned region name being no less confusing than the Former two. It is the name given to the vast expanses of Turkistan and Mongolia falling between the Caspian Sea and the Khingan Mountains in Manchuria. The physical map of the region shows grass lands (northern zone), deserts (Taklamakan, Gogi desert etc.) Oasis (Marve, Samarkand, and Bukhara,) mountains (Karakoram, Tien Shaan, Altac with seven corridors) Lakes, (Baikal, Aral Sea & Caspian) rivers (Amn, Syr, Zarafshan), and it also includes Tibetan plateau, referred to as the Pamir Pivot.

   In the most conventional sense the term Central Asia applies to the Turkemenistan, Tajkistan, Uzbekistan Kirghizia (to the exclusion of Kazikhistan) But for the study of the culture of the region a bit more thoroughly Iran, Afghanistan, and Tibet are also included in it. Lyde, L.W. *The Continent of Asia*, Mac, London,1933, p 26;. Gordon T. Bowles, *The People of Asia*, Weiden Field etc., London 1977, pp 26-30.

2. The nomads who occupied Central Asia at a single period of Time or in different times in its history were not, relatively speaking, at the same level of cultural advancement. Sakas (or Scythians) were one of the early nomadic tribes who broke and bread the horse. The burial finds associated with them show the richness of their culture. Sedentary people near Oasis knew agriculture and generally fortified their cities. Samarkand, Merve and Bukhara were trade centres from very ancient period. During the last centuries of pre-christain era there were many centres of learning and religious importance, Zoroastrianism, Budhism, Nestorian Christianity, flourished side by side.

   Kazakhistan furnishes repertoire of earliest stone age culture (Borykagshan). While To -Sar in Kirghizia Semi-Ganj in Tajkistan furnish late stone age culture.

   Southern region of the Central Asia was culturally more advanced for obvious reasons, it had permanent settlements which were in better contact with the Westen World (Iran more particularly).

   Ranov, V.A. On the relation between the paleolithic cultures of Central Asia and some oriental cultures, paper read in the VII Int. Cong. of Anthropological and Ethnological Science, Moscow, 1964, pp 15-16; Stein, Ser India, I, p 538, Vol. III, P 1392 ff. Kent-*Old Persian*; See also Tamara Rice, *The Scythian*, London, 1953 Renove, op. cit, P 30.

3. The Middle Palaeolithic Cultures of India, Central and Western Asia and Europe in *Central Asia*. Proceedings of International Conference on Central Asia 1969 (at Delhi) 1970, N.D., pp. 43, 44, 45.

4. S.P. Gupta, India and Central Asia in old Stone Age, *Central Asia* pp. 16-20.

5. Coles J.M. and Higgs E.H. *The Archaeology of Early Man,* Faber and Faber, London, 1969, pp 344 & 377.

6. Ranov, op cit, p 7; S.P. Gupta op.cit. p. 17

7. Okladinikov Research of the Monuments of the Stone Age of Tadjkistan, *Materials and Researches on the Archaeology of the USSR* No. 66, 1958 pp 14-41.

8. Krishnaswami, *Stone Age in Ancient India* No 3,1947, p. 26. Graziosip, *Pre-historic Research in North Western Panjab* Leiden 2964; Allchin B and Raymond, *The Birth of Indian Civilization, Pelican,* 1986, p 74.

9. Abridged version of Palaeolithic and Mesolithic Sites in Central Asia (pp 384-421) ed. Hallam L. Movius in, *Proceedings of the Amercian Philosophical Society, Vol 97, 1953.*

10. Okladinikov AP Research of the monuments of the Stone Age of Tajikistan, *Materials and Researches on the Archaeology of USSR* No 66, 1958, pp 14-41 De Terra, H and Pallerson, *Studies on the Iceage* in Washington, 1939.

11. S. P Gupta, op. cit., p 20.

12. Renov, V.A., *Stone Age of Tadjkistan,* Dushanbe, 1965, *On the Relation of Paleolithic....* op cit, p. 9.

13. *Central Asia,* Proceedings of International Conference on Central Asia organised in February, 1969 at New Delhi, Publisher ICC, 1970, p.18.

14. Gordon T. Bowles, op cit, p. 243 Bada, Jeffrey, Coast Dig Focuses on Man's move to New world by Boyce Rensberger *New York Times*, 16 August, 1975.

15. The Eastward movement of the man was barred by the absence of fav outrable climatic conditions beyond Baltic--Black Sea, marshy lands of Ob Basin and non availability of food in these lands. From Tashik Tash

cave site we have neantherthaloid remains of a boy, CF Gordon T. Bowles, op cit, p. 55 Okladnikov, A.P., Ancient Population of *Siberia* and its culture in *People's of Siberia* ed Levin, M.G. and Potapov L.P. 1964, p.15

16. Gordon T. Bowles, op cit.

17. Gordon T. Bowles, op cit, p. 244 see also Howells, *the distribution of Man* S.A. 1960, p 230. see also *People's of Asia*, op cit.

18. Muller-Beck, H, *On Migration of Hunters Across the Bering land*, Bridge Standfored University Press, 1967, p. 387

19. Gupta, op cit; Muller--Beck, ibid.

20. It (i.e. Hazar Sum) is an open air site in Afghanistan; tools found were produced on calctonian flak blades. Puglisi believes that the 'impliments are of the Levalloisean and Mousterian Technique, C.F. Preliminary Report on the Research at Hazar Sum in *East and West* NS. Vol. No. 14 No 1-2 p. 6.

    Hazar Sum finds come very close to Sanghao Cave (Pakistan) implements of Dani. See Dani, AH., Sanghao Cave excavations, In *Ancient Pakistan* Vol I, 1964, pp 17-47.

21. Teshik Tash in Uzbekistan is an ovalish cave measuring 20 x 20x 7 m. Teshik Tash means a stone with an opening.

22. Gordon T. Bowles, op cit, p 245

23. Ibid,

24. Lamberg-Karlovsky, CC,. *Review of Massion*, V.M. and Sarianidi VI. Central Asia: Turkemania before the Achaemenides Vol 79. *Ancient Peoples and Places* series Thames and Hudson, *antiquity*, 47: 43 CF Gordon T. Bowles 390ff.

25. Gordon T. Bowles, op.cit, p. 245.

26. A.L. Kroeber, *Anthropology*, Oxford IBH, New Delhi, 3rd Rep., 1976, p. 690.

27. B.K. Thapar, Central Asia and India during the Neolithic and the Chalcolithic periods in *Central Asia*, op.cit. p. 78.

28. By about 8000 BC, when the vegetation appears in the Taklamakan region and big game began to arive, the mesolithic period startes showing its signs. Here and elsewhere in Kazakhistan Upper-Palaeolithic merges with the Mesolithic; as compared to other sites in Europe the time assigned to it is very late. See Watson William, *Cultural Frontiers in Ancient East Asia,* Edinburgh University Press, 1966, pp 8-10.

From Volga to lake Baikal and beyond in the Central Asian steppe zone the fishing, hunting and gathering cultures persisted till very late as compared to Eastern Europe. Though they produced pottery and other Neolithic artefiacets people were not producers.Piggot calls this state sub-Neolithic culture, see his *Pre-historic India* Hormondsworth, Penguine Books, 1952, p. 268.

29. Djetun culture shows links with the early farming settlements of the Near East. Grass lands of Mongolia have also yielded Neolithic implements and settlements which are identified with Cis Baikal, Trans Baikal and Yakutia.

30. Anau was the first great site of antiquity in the Near East some scholars say that Anau I began about 4,000; II about 3, 000 and III from 3000-2000, A.L. Kroeber, op cit, pp 696-697.

31. Type of wheat found at Anau is of chromosome- 42 this is the same type as found in Mohenjudaro. It is known as *Triticum spetta*.. It is a wild type. the kind of barely found from this place is Hordeum-distichum A.L. Kroeber, op.cit, p. 694.

32. Bones of camel occur at Anau, as in Indus valley soon after 3000 BC. Horse bones are found in the bottom layers; the *equus Przewalski* is a wild species, Kroeber, op.cit, p. 694.

33. Thaper, op.cit, p. 79.

34. Ibid, p 78.

35. The precise time and place of Origin of Western Bronze making has not been determined. it proceeded the Scytho-Saramatian movement from Keltiminar culture of the Aralo-Caspian region to the Minusinsk and Altai river.

36. The Caspian Aral sea people were less consistent settlers than the Altai people which provided natural habitat for a settled life. See N.N. Kosmin, chern *Sibirskiya Zapiski* Aug., 1916 No 3 pp 95-112 CF *The Turks of*

Central Asia by M A Czaplicka, op.cit, 1973, p. 100. Distribution of artefacts show that the people of Keltiminar (Scytho-Sarmatians) moved in due time to Minusinsk and Altai region. Gordon T. Bowles, op cit, p 251.

37. B.K. Thapar, op cit, pp 78, 79; these cultural sites were apparently occupied by Scythians or Sarmatians.

38. The Neolithic Period of Central Asia, generally summed up under Siberian Neolithic culture reveals affenities with Europe and East Asia. Early burial sites point towards hunting and gathering economy to the absence of agriculture. 3rd and 4th millenuim BC shows a marked improvements in ceramics, stone tools and hunting equipment and harpoons. It is during this period that we find carvings of mammal, fish and human figurines. Skeletal remains are more akin to European or West Asian type.

39. Mesopotamic Neolithic proceedes the Caspian basin culture by atleast 3000 years. Okladnikov, A.P., Ancient population of Siberia and its *Culture in People's of Siberia ed Levin*, M.G. and Potapov, L.P. University of Chicago press, 1964, p. 20

40. Minusinsk basin is known for first Bronze Age artefacts. The type site is at Afanasyer. It grew out of the 3rd phase of Neolithic, time being second mellenium BC. It has provided polished adzes, flaked knives, needle holders and strap bindings for wooden vessels. It has closer affinities with Burzahom in Kashmir.

41. There are a few copper or Lead twisted Ornaments in layer I at Anau. The late appearance of flint sikcles and dog bones are presumed by Mr. A.L. Kroeber as an accident of preservation or excavation.

42. Thapar, op cit,p 81

43. Ibid, p. 81.

44. Ibid, p. 80

45. Ibid, p. 81.

46. Ibid, p. 81.

47. At Anau lower most layer (IA) has copper at minimum. (IB) shows copper pin and Awls. A. L. Kroeber, op, cit. p. 707.

48. Kroeber gives one more time sequence for Anau which runs thus Anau I 4000 BC; Anau II about 3,000 and last from 3000- 2000 BC.

It is the last phase of Bronze Age at Anau which falls under Dynastic era. It is associated with the social classes segregated in wealth, occupation and rank. rulers begin to rule in the name of gods; classes show interdependence, *Anthropology*, pp. 96, 705, 708.

49. Figurines of women and animals.

50. Megaliths or *Menhirs* appear in the late Neolithic and copper age (early Bronze Age?). These gigantic stones are erected on the burial site for cult purpose or remembrance or mark of respect; actual purpose is debatable. A.L. Leskov, Treasures from Scythian Barrow (fig II) in *Journal cf Central Asian* 1996 Vol. 7, No.1

51. These burial mounds known as *kargans* are spread in thousands and belong to Bronze or iron Age. There are with them stone memorial tablets called *koyotash* by native Turks.

A.V. Adrianoff, *Sketches of the Minusinsk* Country 1904; I.T. Savyenkoff. *the Stone Age in the Minusinsk* Country- 1896. C.F. *The Turks of Central Asia*, op cit. pp. 80-83.

52. Ibid, pp. 83, 84.

53. The old pit culture in the Eurasian Steppes was taken over by Catcomb type. In sedantary cultures, spinning and weaving also seems to have been practised. The abundance of implements, generally associated with the battle betray the war like nature of their users. A.L. Leskov, op cit, p. 47.

54. Okladnikov op cit p 58. Tagarian Period (1000-100 BC) furnishes bronze of typical nomadic animal style.

55. In the meadows of Altai mountains burial mounds of bronze age were first excavated through the efforts of Rudenko in 1928. Excavations continued as late to 1949.

The animal style of Lurs (1200 BC) who are often equated with Hittites is reminiscent of Scythic. Grodon T. Bowles, op cit, p 250, 251 M.A. Czaplicka, op cit, pp. 82, 83, Leskov, op cit, p. 51, passim.

56. Gordon T. Bowles, op cit, p 251.

57. At Anau next to the bottom layers we find horse bones of wild species presumably *equus przewalskii* A. L. Kroeber, op cit, p 693.

58. Ibid, pp. 692/693.

59. Ibid, pp. 500-502.

60. Scythians learnt chariot driving much later, they were basically horse riders *Peoples of Asia* op cit, p 251.

61. Central Asia i.e. the arid zone between Caspian Sea and Eastern limits of Mongolia has two, well marked zones falling North to Tibetnn Plateau; Northern zone with vast grass lands and desert and oasis southern zone. North zone is the supposed home of all great Central Asia nomades. It includes meadow lands and was support base for nomadic tribes.

    Gavin Hambly, *Central Asia*, Weiden and Nicolson 1969 London. pp. 2 and 10 *see also people of Asia*. p 42.

62. Hambly, ibid pp10-18, Pastoral momades had trade as their secondary occupation. There were the few times indulged in looting and plundering the carvans like Hsiungnu tribe but most of them earned money by fixing taxes on the carvans who came their way.

63. Nomades were always under pressure, they had to sufeguard their grazing lands and be constantly on look for better grassy lands hence, Feuds were common.

64. Scythians were pushed out from their lands which were beyond Volga by *Massagatal* confederacy, the Scythians on their way down South had to fight with the tribes living across Volga for their new home.

    Puri, B.N, *Buddhism is Central Asia*, Banarsīdas, New Delhi 1987 p30

65. A.L. Leskov - op at page 50 passium

66. The fate of Ceyrus ( ) is well known,Darius ( ) was challanged by a Scythian king, Scythians fought a kind of war which could be better called now Guerilla war, A.L. Leskov, ibid p 50. A.L. Leskov op cit. at, p 49 Herodous mentions, Scythians an invinsible and of unapproachable people"

67. E.D Phillips, "New light on the Ancient History of the Eurasian steppe" in *American journal of Archaecology* LXI, 1957-269-80 quotes Herodotus in detail.B.N.Puri opcit p 31, Hambly opcit p 19

68. Puri- ibid

69. Puri- ibid

70. Duchessue - Guillemen, Religion of Ancient Iran p 109 ff

71 Ibid

72. Pazeryk finds confirm Herodotus on Scythians Hambly, op cit, p 20; Chiefs were highly decorated with weapons and enjoyed trade relations with Iran and China. Hambly, op cit, p 25; Gordon T Bowles opcit p 249

73. Okladinkov, op cit, p 68

74. Ibid, p58

75. Ibid

76. Herodotus (1, 201) tells us that massagatai occupied the lands opposite to Issidorus - CF. Hambly; see Gordon T Bowles opcit p272

77. Splinter groups from Hephthalites and Sarmatian Alani got mixed with them

78. Tarn 1951 PSI; Krader *People of Central Asia*, p. 69.

79. "Massagatai lay opposite to that Issedones" CF Hambly see Herodotus 1, 201

80. Lawrenee Krador, *People's of Central Asia*, p 75 Hambly, opcit, p19

81. Scythians driven out by Issedones arrive in Ukrine inhabited by Cimmerians who move towards Anatolia.Scythians come to occupy Media and rule it for 28 years.

82 See Hambly,Central Asia opcit p 19 Historical Ethnography of the Tarim basin before the Turks, *Palaeologica IV Tokyo*, 1956, 38 Hambly, ibid.

83. These Sakas had earlier occupied Tarim basin Gordon T Bowles opcit,p 105. Yue-chih, Tocharians and Asii (known as Iranic Saka) formed an Ethnic group, Barthold CF Lawrence Krader, op cit, p 75.

84. T.G.Kent, Old Persian Texts, *Journal of Near Eastern Studies* II 1943,302-6; Hambly, *Central Asia*, op cit, p 25 Darius Suez inscription calls Sake as Sake of the marshes.

85. Ibid; B.N. Puri _ opcit p31

86. Herodotus:

87. Khorasan desert kept these settlements always in comparative isolation,Gordon T. Bowles, op cit p 105.

88. Hambly, op cit, p. 25.

89. Ibid, p. 24

90. Gorden T. Bowles, op cit, p. 105.

91. Ibid.

92. B.N.Puri, - op cit, p. 31

93. Hambly, op cit, p. 25

94. Ibid

95. Kent, old persian, op cit, p. 25

96. Saka Language of Khotan has *aurga-orga* meaning adoration, cult or homage

97. Persopolis sculpture has a representation of a *Tigra Khunda* with pointed cap. Hambly, op cit.

98. This is accidental similarity between the words unless some positive evidence is forthcoming it cannot have any serious implications.

99. The legend concerning the social division among Scythian is recorded by Herodotus 4, 5 sq. it also mentions the legendry origin of their nation and the powers bestowed upon the king, See Dumezil l' Ideologic tripartite, Brussels 1958, 9 C.F. Ovchesne op cit, 108.

100. Dumezil, 11J 1962,187 sq cf Duchessne, op cit ,p108

101. Iranians believe in tripartite division of their society (i.e priests, warriors, husband man). Tripartite division is the basis of the Zoroastrian Beneficient immortals.

102. Herodotus distinguishes between Scythian tillers of land and Farming Scythians, Leskov, op cit, p. 50.

103. Duchessne, op cit, p. 108

104. Leskov, op cit, p. 50

105. B.N.Puri

106. B.N.Puri

107. Herodotus reports their cannibalic activity also

108. A.L. Leskov op cit p 50 passium

109. Duchessne, op cit, p. 107

110. Ibid

111. A tapestry with flying cranes carved on it is remeniscent of Chinese art; Animal combats are depicted in felt cut outs

112. K. Jettmar, The Altai before the Turks. *The Museum of far Eastern Antiquities*, Stockholm: Bulletin XXIII, 1951 p 182

113. C.Trever, *Excavations in Northern Mongolia*, Leningard,1932 C.F. Hambly, 318 ff.

114. A.L.Leskov, op cit, p. 49

115. Ibid, p. 50

116. Sankrityayana, The History of Central Asia New Age Publication New Delhi 1964, pp. 11, 12

117. Skrine, 17 and passim.

118. Gordon T Bowles, op cit, p258 Hsiungnu earlier occupied Altai mountain

119. Ibid

120. Ibid

121. Ibid

122. Ibid

123. Baldev Kumar, *The Early Kushans*, Sterling Publishers New Delhi, 1973 pp 14,15.

124. *Indian Antiquary; Ssu-ma-chien* Historial records of 91 BC chap123, fol 4

125. Pulleybank E. A, *The consonantal* system of old chinese,*Asia major*, 9:206ff

126. Grousset Rene, *The Empire of the Steppes*, New Brunswick; Rutgers University press, p 19

127. Grousset Rene calls them Hsiun-you, see above ff 126

128. Ibid

129 Gordon T. Bowles, op cit, p. 258

130. Warring Rahula Sankrityana, The History of Central Asia, New Age pub., New Delhi, 1964 pp. 16-30.

131. Henry Francis Skrine, *The Heart of Asia*, Methuen Co, London, 1899,p5

132. Hambly, op cit, p 20; Queen Tomyris of massagaties who ruled beyond Jexartes defeated Cyrus and killed him in about 530BC.

133. Darius, who was a great warrior could not subdue Scythians for long.

134. Alexander founded many cities, all of them were known as Alexandria see Tarn, *Greeks in Bactria and India*, Cambridge, *1938 p470*, B.N.Puri, op cit, p 32

135. Skrine, op cit, Hambly, op cit, p. 31, 7

136. Chandargupta Maurya had already devested Seleucns of much of his Southern lands between India and Paropamisus:

137. In 247 Nisa (near Ashkabad) became the capital of Arasacid dynasty. It is the site of famous Ostraca Inscriptions.

138. W.W.Tarn, two Notes on Seleucid History, *Journal of Hellenic Studies*, LX,1940, p. 84-94

139. Gardner Greek and Scythian Coins p20

140. Diodotus issued coins portrying on the reverse Autiochus II but he soon gave up the practice, Hambly, op cit, p40

141. Skrine, op cit, p. 11

142. Gawin Hambly, *Central Asia*, op cit, p 32-34.

143. Gardner, op cit, p20

144. Antiochus considered himself the 2nd Alexander.

145. Arasacides were destined to renew and propagate Zoroastrians faith in latter years. See *Cambridge History of India* Vol. I, Chap XVII

146. See A. K. Narain, *The Indo Greeks*, Oxford, 1957 pp 130-133, Baldev Kumar, op cit, p 15.

147. *Heart of Asia*, op cit, p17; Gordon T. Bowles, op cit, pp. 258,259.

The great wall of China started with the Tsin dynasty (255-209) and was completed during the reign of Yellow Emperor Chin Shittnang- ti (222-206 BC)

148. Under their leader Mas Tun, in about 200 BC they are said to fall on Yue-chih-Tochari combine ; Gordon T Bowled op cit, p. 259

149. They controlled the route during early part of the Hun rule, Ibid.

150. Gordon T Bowles, op cit, pp. 258, 259.

151. Henry Francis Skrine, *Heart of Asia*, op cit, p 15

152. *Shan Yu* means the supreme ruler

153. M.A. Czaplicka, *The Turks of Central Asia*, pp. 64,65

154. Ibid

155. See *Heart of Asia*, op cit, pp 14-17 *Central Asia* op cit, pp 37-40 Gordon Bowles, pp. 258, 259,*Turks of Centrl Asia*, p. 63

156. M.A. Czaplicka, *The Turks of Central Asia*, op cit, p. 63

157. Usun (near river Ili and Chu) and Kangli (Settled in Tien Shan) were irritating each other; They appeared to Hiungnu for help who in put both of them into subjugation; this self invited plight caused both these tribes to unite. See *Turks of Central Asia*, op cit, pp. 63,64

158. Henry Francis Skrine, *Heart of Asia,* op cit, p 15

159. With this defeat Yue chieh were forced out of Sinkang.

160. The account of their final defeat at the hands of Hsiung-nu is lucidly given in a letter written to Chinese Emperor in 176. See *Journal of the China Branch of Royal Asiatic Society* 1906,SK Ssi-Ki (Historical records) chapter, 110.

161. Baldev Kumar, op cit, pp 30, passin

162. Henry Francis Skrine, *Heart of Asia* op.cit. p 16

163. Ibid

164. Yue-chieh's wandered through Yarkand, Kashghar and Khotan before falling on Sakas; Henry Francis Skrine, ibid p 16.

165. B.N.Mukherji, Nomadic peoples in Greek Bactria in *Central Asia* , op cit, pp121-129 Most particularly note No:35 on pp 128, 129. Rahula Sankrityana History of Central Asia, New Age pub., New Delhi, 1964, p. 100

166. This invasion by nomades took place probably in 141 BC, see Tarn, op. cit. 2nd ed.Cambridge 1951,pp 272 ,294; *Journal of Numismatic Society of India,* XVII,1955, p43; Cunningham, *Survey of India,* Vol. II, p 68. Rahula Sankrityana, Ibid 100.

167. *Saca-rauca* ruled part of Northern India . There are many loan words in the Kharoshti-and Brahmi inscriptions which are said tobe from the East Iranian language as spoken by these people. Rahula Sankrityana, History of Central Asia, Ibid 100.

168. The inscription at Surkh Kotal is very interesting. Coins in the SPS museum Srinagar, Kashmir. *See appendix I.*

169. Ssi-Ki chap 123 folio 4 *Journal of the Anthropoligical Insititue,* Vol. X 1881,p 41

170. Baldev Kumar op cit, p. 17. Mr. Kumar has painstakingly sifted almost all the relevant documents to establish correct date concerning the fall of Ta-hia; B.N.Mukherji, Ta-Hsia and the problem concerning the advent of nomadic people in Greek Bactria in *Central Asia,* pp 21 to 29.

171. Baldev Kumar, op cit, pp. 15, 16.

172. Wei-shu names five *yabgus* which constituted Ta-hia and leaves out Bactria *(Po-chih)* some scholars do include East Bactria into the territory of Ta-hia. *Heart of Asia*, p 16

173. Ssi-Ki, C.F Baldev Kumar, op cit, p 15

174. Chinese envoy chang-kien, reached Ta-hia after much hardships which included his imprisonment by Hsiung - nu against whom he was deputed to seek help from Yue-chih. He returned back in 126 BC.

175. Greeks lost Bactria to Sakas in 163 and in 120 BC Yue-chih overran Bactria.

176. Saca's driven out of their eastern homelands poured in Taxila, Saurastra and Ujjain, crossing Hindu Kush passing through Herat gape they may have reached Indus by first Century BC, See Marshal, *Taxila* 1, pp44 to 73.

177. A.K.Narian, *The Indo Greeks,* Oxford, 1957 p136

178. S. Konow, *Epigraphia Indica* XXI 1932, p 251

179. Kharoshti Inscription.

180. G.K. Jenkins, Indo Scythian mints in, *Journal of Numismatic Society of India* XVII,1955, p 16

181. Baldev Kumar, op cit, p 18.

182. G.K. Jenkins op cit, S.Konow op.cit p 25

183. As the large number of coins discovered from Begram indicate Gondopharnes rule may have extended upto Kabul. Kubul itself was under last Indo Greek ruler Hermaeus who was systematically relieved of his throne by Kajula Kadiphes the first Kushan ruler

184. The conquests of Kajula Kadiphes are attested for *Ta-hia, Asi Kaofn, pota and kipin* which correspond to present day Tajkistan, Uzbikistan,Torkemenistan, South East of Caspian Sea, Afghanistan Ghandhara including Kashmir.

Emerging Exchanging Arrangements of Central Asian Republics

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Introduction

The Central Asian Republics (CARs)[1] are fast emerging as new areas of expansion of world trade and payments. Industrial as well as developing countries are increasingly looking towards them for gainful bilateral and multilateral economic co-operation. Their vast reserves of natural gas, oil and minerals, well-developed infrastructural facilities and rich human resources are attracting huge foreign direct investments from transnational corporations and foreign governments. In view of this scenario, the trade and exchange arrangements of CARs are viewed with great interest by academic and official circles all over the world.

The monetary and exchange arrangements of CARs emerged from the central planning pursued in the Former Soviet Union (FSU) for about seven decades. Under that system foreign trade played a limited

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role as the system was highly inward-oriented. Currency was highly overvalued and there was often an acute shortage of foreign exchange reserves. In the absence of financial institutions and monetary instruments there was no scope for an effective monetary policy except for a passive credit policy. With the disintegration of FSU, a monetary union in the form of ruble zone was created where the Central Bank of Russia (CBR) emerged with the monopoly right of issuing the currency notes for the members of the union. Due to fiscal indiscipline and expansionary monetary policy, external value apart, ruble zone even failed to stablize the internal value of the currency. After the collapse of ruble area, CARs introduced their own currencies. Monetary and exchange arrangements are now being managed independently. the necessary institutional infrastructure in this regard is being developed fast. This paper analysis these new arrangements. Discussion is divided into three sections. Exchange arrangements of FSU are summarised in the first section. Main causes and consequences leading to the emergence and the collapse of ruble zone are explained in the next section. The third and the final section discusses the emerging exchange and trade arrangements of CARs at the end of March 1996.

I. Exchange Arrangements before Disintegration of Soviet Union

a. Trade Arrangements

As already pointed out trade and exchange system of the successor states of FSU is a hangover from the past practices followed during the socialist era. A brief account of the earlier arrangements and their consequences is therefore, imperative before discussing the present trade and exchange arrangements of CARs.

Foreign trade played a limited role in the centrally planned economy of erst while U.S.S.R. Self sufficiency and self-reliance were the guiding principles of foreign trade policy. Domestic production was to fulfill the internal market requirements and exports were made only to import the essential commodities including foodstuffs. Industry was granted complete protection and consequently the export base of the economy remained almost non existant. The commodity basket which Soviet Union could export to the rest of the world particularly Western European countries remained limited in availability and low in quality. The country faced acute shortages of hard currencies and the situation worsened during 1980s when exports failed to pickup in view of increasing international competition.

Inward-orientation of Soviet economy was sustained by the huge size of the country and also by the formation of the Council for Mutual Economic Assistance (CMEA) which involved socialist countries of Eastern Europe, Cuba and U.S.S.R.[2] The commodity composition of trade within CMEA was such that U.S.S.R. exported fuels and raw materials in exchange for industrial consumer goods and grocery products. Within U.S.S.R. the pattern of trade among the republics was guided by the regional specialisation where under intermediates and capital goods industry was mainly concentrated in Russian Fedration, finished goods industry in Belarus, Balitic states and Caucasian republics, and food industry in Moldova and Caucasian region of the country.

U.S.S.R. was highly integrated with CMEA countries. It alone accounted for more than two-thirds of imports from other CMEA countries in mid eighties. Trade patterns within U.S.S.R like CMEA trade were characterised by absurd specialisation, uncertain reciprocal supplies of goods, and high degree of integration imposed by central planning (2,p.22). However, compared to interdependence among members of CMEA, degree of integration among the republics of Soviet Union was higher in the areas of inter-republican trade and foreign exchange management. Internal trade as a proportion of GNP was 21 percent in U.S.S.R compared to 13 percent in Eastern European countries of CMEA (2, p.22) in 1988. For foreign exchange reserves there was a common pool maintained by the central government. Inter-republic trade as a domestic transaction did not require any foreign exchange.

The pattern of foreign trade was the off-shoot of economic and industrial policies pursued during the socialist regime. There was stress on heavy industries, infrastructure building and armaments. Foreign trade was not based on economic aspects like comperative advantage and factor endowments but on idiological reasons. As a result, efficient allocation of resources which is the main advantage of free trade was not allowed to work and market mechanism was relegated to bread, vegetables, and milk products on the domestic scale. State had imposed an arbitrary specialisation on the economy.

Foreign trade was characterised by quantitative restrictions, exchange controls including ban on imports as well as exports. Trade relations with capitalist industrial economies were viewed with suspicion and whatever trade was allowed was confined to the importation of technological inputs and components needed in the heavy industry, space research, and production of the means of destruction. Inorder to facilitate these imports, exports of raw materials, fuels, minerals and metals including gold were allowed.

Industrial sector was totally state-owned. All markets-factor, product, and credit-were dominated by the state. Foreign trade itself was carried out by state-owned agencies and designated state-owned enterpises. No individual was allowed to import or export except minor items of consumption while on official tour abroad. State-run agencies had the monopoly to import and export particular commodities. The prices of importables and exportables were determined by the state and as such there was no reflection on the opportunity cost of production of import substitutes and exportables.

Due to these arrangements and various other structural distortions, industry in Soviet Union was characterised by low productive capacity, large inventries, excessive use of scarce resources, and negative value added at world prices for many products.

b. Monetary Arrangements

Lack of commercially oriented financial intermediation was a principal failure of the central planning followed in U.S.S.R. Financial system was designed to implement the production plan fixed by the central authority. Directed credit led to unproductive investments and controlled interest rates discouraged savings. Summarising the short comings of the financial system, Polanski observes that the "financial system under consideration was not designed to perform the functions of intermediation between surplus and deficit economic units and therefore to transform savings into investments. As a result, the financial system neither stimulated increases in the propensity to save nor did it influence the allocation of financial resources to investment projects. Under the bureaucratic co-ordination mechanism the level of investment was independent of economic unit's voluntary savings and the level (as well as structure) of investment was decided by political bodies or the central planning board without taking into account the financial aspects of the projects" (27,p.262). Banking sector was characterised by `mono bank' system under which the functions of a central bank and a commercial bank were carried by one and the same institution. In the absence of financial markets, financial assets were confined to cash and deposits only.

Ruble was the currency of the country but it was not allowed to perform all the functions of money. Since prices were fixed by the central planning authority, not market, money served as a store of value besides a means of a passive accountancy in the implementation of the central plan. It had no impact on resource allocation. Supply of money was ultimately determined by the central planners, not the monobank system. "Monetary policy was administered and did not belong to the domain of monetary-policy making" (28,p.194). In the absence of monetary arrangements, monetary policy was in practice a passive credit policy (27,p.262).

c. Exchange Arrangements

There was a dual exchange arrangement-one with member countries of CMEA and other with hard currency areas of the world. Within CMEA, trade was more or less balanced bialaterally between any pair of countries. Residual balances were settled in terms of transferable rubles (TRs) which were created by the International Bank for Economic Co-operation (IBEC) at Moscow (member countries had to maintain deposits in TRs at IBEC). Despite use of TRs, rigid bilateralism continued where member countries showed strong preferences against holding the currencies of other CMEA countries. Preference for bilateralism was mainly due to commodity inconvertibility as no CMEA currency including TRs could be spent freely to purchase products within the CMEA countries. Balancing of trade between two countries was exclusively based on adjusted world prices which had nothing to do with the distorted domestic price structures or the currencies of the CMEA members. The exchange rates used were fixed arbitrarily and hence were totally unrealistic (7,p.155). Due to excessive reliance on bilateralism, TRs could not emerge as the key currency of the socialist block. TRs failed to introduce multilateralism into CMEA trade. These could not perform the main functions of money. However, TRs could be converted into hard currencies according to the rules set by the IBEC.

U.S.S.R ruble and other CMEA currencies were totally inconvertible vis-a-vis the hard currencies of the world. Payment arrangements with Western European countries and U.S.A. were settled interms of hard currencies particularly U.S. dollars, pound sterling, and Deutsche mark. TRs were introduced and a major objective was to facilitate intra-CMEA trade. However, like other CMEA currencies, TRs were also highly inconvertible mainly due to three reasons. First, import demand was rigid downwards and could not adjust itself to levels which could be sustained by exports to hard currency areas. This created balance of payments (BOP) difficulties and inadequate international reserves. Second, commodity inconvertibility reduced the competitive ability of

CMEA exports. Third, serious distortions necessitated the use of adjusted world prices in intra-CMEA trade. This price structure was totally unrelated to the domestic price structure of CMEA countries (7,p.145.).

Prices in intra-CMEA trade were fixed on the basis of world prices (usually the average of past five years). These world prices were then transformed into TRs. Since a TR had been declared to be worth 0.987 grams of gold[3], arbitrary exchange rates had to be used to transform world prices into TRs. This made TRs (and also U.S.S.R ruble) highly overvalued and BOP deficits persisted and widened over the period of time. Devaluation could not emerge as a means to correct BOP disequilibrium as exchange rates had no real price function. Besides, there was a strong bias against devaluation as a policy instrument among the officials of the government; it was regarded ineffective and inappropriate device and its use was expected to complicate the hard currency problems of the socialist countries. External deficits were financed by short term borrowings from international commercial bankis and Euro currency markets.

d. Era of Economic Reforms

During the last seven years of U.S.S.R, i.e, 1985-91, many market-oriented reforms were introduced in the country. Two-tier banking system was introduced in 1987. New banking legislations of December 1990 authorised the establishment of financial institutions in both private and public sectors. During the same year, central banks were also established. Republican branches of U.S.S.R Gosbank were converted into full-fledged central banks. Reserve requirements, refinancing of commercial banks, and lending to the government emerged as the main instruments of monetary policy. Credit instead of being allocated by he Gosbank according to the credit plan, came to be decided at the republican level.

This period was also characterised by deteriorating macroeconomic situation of the country. Following dissolution of CME in 1990, trade flows between U.S.S.R and Eastern Europe declined drastically. Various industries depending on inputs and spare parts from Eastern Europe were hard hit by the disruption of supplies. Declining trade flows with these countries were mostly settled through barter deals. Macroeconomic imbalances worsened during 1990 and 1991. There was a significant decline in net material product and industrial output on the one hand and a sharp increase in prices and budget deficits on the other. Gosbank was compelled to finance the huge fiscal deficits through excessive monetary expansion leading to inflation. There was a rapid growth of monetary demand mainly due to high wage increases, rising budget deficits, and expansionary monetary policy. Decline in energy exports and refusal of Western banks to roll over short term credits led to a precarious BOP situation pushing U.S.S.R very close to default on international payments. Exchange rate of ruble on free market also depreciated rapidly (9,p.71). This gave birth to serious problems of confidence in ruble and other arrangements within the republics of U.S.S.R.

II. Emergence and Collapse of Ruble Area

a. Emergence

Disintegration of Soviet Union in December 1991 exposed the successor states to new economic challanges. On the one hand these newborn republics had to address the difficult task of correcting the distortions caused by the decades of Central planning, on the other hand they were faced with the immediate task of ensuring macroeconomic stablization which had worsened during 1991. Compared to 2 percent decline in 1990, output fell sharply by 17 percent in 1991. Annual inflation increased from 5.6 percent in 1990 to 86 percent in 1991. Fiscal deficit rose sharply from 5.6 percent to 24.1 percent during the same period. Growth of money supply was very fast - 105 percent in 1991 compared to 17.6 percent during 1990. Volume of exports declined from -0.4 percent to -12.1 percent while as external debt as a proportion of GDP increased from 3.6 percent to 6.2 persent during the same period.

Interbank market rate of ruble (end of the period) against U.S. Dollar depriciated from ruble 32 in April 1991 to ruble 100 in Nov. 1991.[4]

Following dissolution of U.S.S.R., the domestic co-operative inter-relationships among the republics which had been developed during the single economic zone of Soviet Union disappeared and were transformed into foreign economic relations overnight. Internal payments system brokedown. Inter-republican trade collapsed leading to further loss of output. Immediately there was no framework in place for monetary and exchange relationships among the newborn independent republics. Though in theory the successor states could introduce their own currencies yet in practice they had hardly any viable option but to maintain and strengthen the common currency of ruble area.[5] More specifically, some of the main compelling factors for maintaining the ruble area were as follows:

i) The steep fall in out put of Eastern European countries of former CMEA countries during 1990 and 1991 was mainly due to the collapse of intra-regional trade.[6] Similarly, disruptions in interrepublican trade during 1991 was an important factor responsible for the sharp decline in the output of all the republics of Soviet Union. The newborn republics could hardly overlook the adverse consequences of a collapse in interrepublican trade. They realised that the introduction of seperate currencies would create barriers to trade between the newly independent states while as maintaining the ruble as the common currency would avert a further decline in interrepublican trade (17, p.41). CARs in particular showed a keen interest in maintaining the ruble area as they wer highly dependent on interrepublican trade.[7]

ii) In addition to advantages in terms of interrepublican trade, monetary stability was one of the main motivations to join the ruble area. Many republics were convinced that compared to separate currencies introduced at the republican level, ruble area provided better prospects for monetary stability (10,p.132). Infact newly independent countries were aware of "their limited institutional capacity at the outset to run fully independent central banks in a market-oriented economy. They were aware of their need for substantial technical assistance and policy advice, and also faced basic constraints on how rapidly they could design, print, and deliver a new Currency" (24,p.358).

iii) An immediate move to trade in convertible currencies was not possible except in theory. The general shortage of hard currencies would have very rapidly led to more shrinkage in trade flows (30,p.148). Ruble, therefore, was the more immediate and feasible solution.

iv) Dissolution of U.S.S.R also meant the disappearance of economic ideology. Newborn states started a transition to market economy. To fully integrate with the world economy, successor states needed an economic system capable of competing with imports and developing new export markets based on efficiency and competitiveness. Since this could be done only in the medium term through structural reforms, the new republics saw an immediate advantage in preserving and perfecting the economic ties based on geographical proximity, inter-company links, and transportational network developed earlier during the single economic zone of U.S.S.R. Successor states recognized "that it would take time to decouple such ties even if they were not economically viable" (26,p.84).

Due to these and many other compulsions, ruble area was formed immediately after the disintegration of U.S.S.R. Besides Armenia and Belarus, Central Asian Republics of Kazakistan, Tajikistan, and Uzbekistan were among the first to join the ruble area. There was a tentative agreement to stay with ruble for two years (9,p.7). National Bank of Russia had to issue the currency and it had the obligation to satisfy the currency requirements of the member countries of the ruble zone. Apart from administrative, political, and military considerations, willingness of member states to accept the monetary policy dependence on Russian Central Bank was due to various other reasons. Russia for example, alone accounted for 59 percent of GNP, 66 percent of industrial output, and more than two-thirds of total trade turnover of FSU in 1988 (30,p.148). After disintegration, it emerged as the largest country among the successor states accounting for 51 percent of populations and 76 percent of area of FSU.

Since ruble area was formed at a time when the macroeconomies of the member countries were in distress, securing of unrestricted trade and stablization of inflation were the immediate objectives which the members of ruble area sought to achieve. In this regard, member countries were required to maintain extensive monetary co-operation among themselves so as to stablise inflation and reduce it to low levels. Central banks of member states had to pursue tight monetary policies. Interest rates had to be set at positive levels in real terms. Similarly refinance rates had to be higher than the anticipated inflation rates (13,p.10). Monetary and credit co-operation also implied increasing intermediation through libralization of interest rates and increase in lowest deposit rates by the saving banks. Success of monetary co-operation crucially depended upon the assumption that central banks were free from all political interferences while executing the monetary policy. Since bulk of fiscal deficits were financed by the monetary expansion (hence fiscal deficits directly translated into monetary expansion), member countries had to reduce the budget deficit to ensure the success of monetary co-operation. This had to be achieved through substantial reductions [illegible] expenditure in line with the fall in real revenue ([illegible]).

Members of ruble area had to adopt a stable and convertible currency so as to achieve a successful transition to market economy. Since stablization of the external value of ruble could not be achieved without stablising the internal value of the currency, Russia and other members of the common currency had to adopt tight monetary and fiscal policies. In the absence of strong fiscal position, adequate foreign exchange reserves, and credible central banks, tight monetary and fiscal policies were the only means of providing a monetary anchor to the exchange rate of the ruble (19,p.342). To further ensure the stability of the exchange rate and facilitate its convertibility, IMF was to provide (as a part of agreement with Russia) 6 billion dollars towards currency stablization fund to the Central Bank of Russia. This amount was to serve as an additional monetary anchor and its success, besides strong monetary and fiscal policies, depended on establishment of a 'unified and market-determined exchange rate set at realistic level' (11,p.151).

b. Collapse

Ruble area which was formed in the begining of 1992, collapsed by the end of 1993 as all the independent states of FSU except Tajikistan had introduced their own currencies by that time. In the second half of 1992, three Baltic States and Ukraine left the ruble area while as many republics introduced currency substitutes such as Belarusian, Kazak, and Uzbak rubles which circulated at per with Rusian ruble. Turning away of member countries from ruble area was mainly due to economic distress experienced by the countries of the common currency union.

During 1992 and 1993 economies of ruble area were in severe recession. Inflation-the most important cause of economic distress-escalated to a rate of well over 1000 percent at the end of 1992. Price libralization, elimination of monetary overhang, loose monetary policy and lack of adequate fiscal discipline were the main reasons of hyper inflation.

Monetary policy instead of being restrictive and market oriented was inflationary in nature as it relied exclusively on 'directed sectoral credit frequently at subsidised interest rates, and ceilings on deposit rates of saving banks' (20,p.50). Budget deficit far from being reduced, acutally increased from 3.6 percent of GDP in 1992 to 9.5 percent in 1993 in Russia. While soft budget constraints on state-owned enterprises continued, no measures were taken to increase the revenue of the states. Monetary overhang estimated at one-third of financial assets at the end of 1990, also triggered off inflation (18,p.260). Libralization of prices introduced by Russia in early 1992 led to adverse trade balances of many republics particularly those which were heavily dependent on imports of raw materials and fuels from Russia. Early price deregulation not only disrupted the process of transformation in other republics, it also triggered a process for the creation of new currencies (1,p.1). The terms of trade shock suffered by net importers was so harsh that even the potential exporters could recieve no payments for their exports (30,p.146).

With regard to convertibility of currency, full convertibility apart, ruble area even failed to achieve the inner convertibility of the currency. On the one hand, internal convertibility of ruble was introduced and on the other, several important goods were placed on the special list subject to several payment restrictions. Such good could be exchanged only through inter-governmental foreign exchange clearing system, imports and exports of these goods were subject to approval by the government, and imports of such goods could be funded only by the government. "Infact in the raw material sphere a governmental monopoly was re-established, with prices set by the government and trading taking place exclusively on a barter basis" (30,p.145).

Instead of a uniform exchange rate, ruble area functioned with a multiple system of exchange rates. At the end of 1991, ruble had three main exchange rates against convertible currencies—commercial rate, tourist rate, and interbank market rate. In the first half of 1992, main official exchanges rates included quasi-market rate, special commercial rate, and interbank market rate. 10 percent of export earnings in hard currencies had to be surrendered to the CBR at quasi-market rate set initially at ruble 110 per U.S. dollars. 40 percent of convertible currency export proceeds had to be surrendered at special commercial rate of ruble 55 per U.S. dollar. While as quasi-market rate helped CBR to purchase foreign exchange for policy intervention, special commercial rate helped the government to build up hard currency reserves for the country (22,p.ix). The interbank market rate was determined through auctions conducted by Moscow Interbank Foreign Currency Exchange (MIFCE). However, this rate was not used as an official exchange rate until the end of June 1992. Since July 1992, official exchange rate was defined as the value of the ruble against the U.S.dollar as announced twice a week by the CBR on the basis of MIFCE. Official rates in member countries were based on the rates quoted by the CBR.

With the introduction of a uniform exchange rate since July 1992, external value of ruble became highly unstable. Since the total turnover involving foreign exchange dealings was very low, exchange rate determined at MIFCE was heavily influenced by speculations. In the second half of 1992, ruble depreciated considerably against dollar. Inter bank market rate in Russia crashed from ruble 134.3 per U.S. dollars at the end of June 1992 to ruble 398.2 at the end of 1993 (22,p.36). However, despite this depreciation, ruble remained over valued due to strong intervention by the CBR. Application of highly overvalued currency served only to obstruct the foreign trade (30,p.145). Export decline continued. While foreign investors were hesitating to provide hard currencies to finance imports, about half of export earnings were invested abroad by the exporters (16,p.11). This led to acute shortage of foreign exchange earnings. The commited 6 billion dollar currency stablization fund by IMF could not be activated as it was linked to improvements in macroeconomic stablization which the ruble area had miserably failed to achieve. "Under these circumstances, it was only possible to improve hard currency reserves by defaulting on external debt" (29,p.129). Flight of capital was also responsible for the decline of output and investment in ruble area particularly in Russia.

Besides high instability of ruble, there were various other reasons which led to a loss of confidence in ruble area. There was lack of adequate monetary policy co-ordination as there were no formal arrangements in this regard (15,p.11). Most of the republics faced acute shortages of currency notes and were forced to take speedy measures including the introduction of currency substitutes. Soon after ruble area was formed, Russia started bilateral agreements with the member countries forcing them to leave the ruble area (24,p.358). Following price libralization, balance of payments deficits of member countries increased. During 1992, these deficits were librally financed by the CBR. Since it led to inflation, this policy was stopped and from early 1993 interstate balance of payments deficits were no longer financed by the CBR. Two serious consequences emerged immediately. On the one hand, demand for cash rubles by members countries increased phenominally so as to finance the increasing balance of payments deficits with Russia, on the other hand, there was a huge inflow of these rubles into Russia from most of the members of the currency union. To prevent itself from this inflow, Russia demonitised pre 1993 bank notes in July 1993 (these notes were now no longer legal tender in Russia). Demonitisation of ruble signalled the end of ruble area as it deprived the member countries of a common currency (23,p.551). Subsequent efforts to revive the ruble area also met the same fate. Members of the ruble area had no options but to introduce their own currencies. By the end of 1993, except Tajikistan, all the members had introduced separate currencies.

III. New Instruments of Exchange Management in CARs

All the republics of Central Asia have their own currencies. Kyrogyz Republic was the first CAR which introduced its own currency-Som- in May 1993. This was followed by Teng, Manat, and Sum by Kazakistan, Turkmeinstan and Uzbekistan respectively in the second half of 1993. Tajikistan continued with post-1993 Russian ruble and finally introduced its own currency in May 1995 (see table I). All the republics have established their own central banks which are responsible for monitoring the internal and external values of their respective currencies. The currency and exchange arrangements pursued by these countries are summarised as under*.

i) Exchange Arrangements

The exchange rate arrangements adopted by CARs are within the permissible arrangements under the present international monetary system working under the surveillance of the IMF. The arrangements adopted are flexible ranging from managed to independently floating systems. Kyrgyz Republic, Turkmeinstan, and Uzbekistan have managed floating system while as Kazakistan and Tajikistan have independent floats.

ii) Exchange Rate Determination

Exchange rate in each republic is determined against the US dollar. Exchange rates vis-a-vis other currencies are determined on the basis of cross-rates. A multiple system of exchange rate determination is in operation. At least three rates can be distinguished-interbank rate, official exchange rate, and a parallel market rate. Interbank rate is a freely negotiated rate determined by the forces of demand and supply through transactions among authorised banks and/or between banks and enterprises. Official rate is determined either on the basis of auction rates as in Kazakistan and Tajikistan or on the basis of interbank rates as in Turkmeinstan and Uzbekistan. When determined on the basis of auctions, official rate is usually taken as the mid point of buying and selling rates of a currency against US dolars during the previous week. In Uzbekistan, official rate is based on the weighted average of the interbank rates of the five days of the previous week (excluding twice weekly auction days). In Turkmeinstan, the rate is adjusted once a month. Parallel markets usually exist for small transactions. Official exchange rate is mainly used for revaluation of foreign currency balances, foreign exchange transactions, customs duties and calculation of surrender requirements of foreign currency export proceeds. Individuals can buy and sell foreign exchange throuh exchange bureaus which quote interbank rates.

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* This section is exclusively based on the post-1992 annual issues of IMF Publication : Exchange Arrangements and Exchange Restrictions

iii) Currency Auctions

Auctions used to determine the exchange rate are held either thrice a week as in Kazakistan or twice a week as in Kyrgyz Republic. In Tajikistan, these are conducted only once a week. Auctions are held through interbank currency exchanges-Kazakistan Interbank Currency Exchange (KICE) and Tajikistan Interbank Foreign Currency Exchange (TIFCE). In some republics like Kyrgyz. Republic these are still conducted by the central bank directly.[9] Only authorised commercial banks can participate in these auctions. In some republics-Kazakistan, Turkmenistan and Uzbekistan-authorised banks charge a commission on foreign exchange transactions.

iv) Control of International Reserves

In majority of the republics the control and management of foreign exchange reserves lies with the central bank of the republic. In case of Uzbekistan, control is jointly shared by the Central Bank of Uzbekistan, Ministry of Finance, and State Tax Committee. In Turkmeinstan, use of foreign exchange is controlled by the president of the Republic. Foreign exchange licenses to commercial banks are granted by the central bank while as foreign trade is regulated by the Ministry of Finance which issues import and export licenses.

v) Resident and Non-resident Accounts

Barring major transactions which are authorised by a central bank, there are no restrictions on residents to receive and make payments in any convertible currency. Foreign currency is not allowed for the settlement of domestic transactions between residents. Settlement of commercial transactions with non-resident entities from rest of the world including countries of FSU must be made through correspondent accounts of authorised commercial banks or the central bank of the republic. Except in case of Turkmeinstan, barter transaction with rest of the world have been prohibited. In case of bilateral agreements, settlement of payments is according to the terms and conditions of the agreement. Bilateral agreements are largely confined to the countries of FSU. However, Uzbekistan and Kyrgyz. Republic have bilaterral agreements with some Asian countries including China, Iran, India and Pakistan. Transactions with other countries are settled in convertible currencies.

Except in Turkmeinstan where an individual has to possess a certificate and in Tajikistan where an enterprise must be registered, in all other republics there are no restrictions either on individuals or enterprises to open and maintain foreign currency accounts in any authorised commercial bank. Retained export earnings and foreign exchange transferred from abroad can be credited to these accounts. Balances in these accounts can be used freely for any purpose. Residents, however, have to seek a permission from the central bank to maintain foreign currency accounts abroad. Non-residents can open accounts in local currency or foreign currency with authorised commercial banks as in Kazakistan and Kyrgyz. Republic. In Uzbekistan and Tajikistan both accounts are allowed. Such accounts could be credited with any amount of local or foreign currency lawfully acquired by the non-residents. Withdrawls including transferes abroad from these accounts are usually unrestricted in Kyrgyz Republic and Uzbekistan while as in other republic like Kazakistan, transfers abroad are restricted to only 'I' account.

vi) Convertibility

Majority of CARs have abolished surrender requirements of hard currency export proceeds. However, these are still in operation in Turkmeinstan (50 percent) and Uzbekistan (30 percent). Some items like gas in Turkmeinstan and cotton fibre, non-ferrous metals, crude oil, gas and some ferrous metals in Uzbekistan are subject to surrender rquirements much above the average levels.

Kyrgyz. Republic has already achieved current account convertibility while as Tajikistan and Uzbekistan had removed most of the restrictions in this regard by the end of 1995. In these republics residents are allowed to take any amount of foreign exchange abroad for purposes of travel, medical expenses, education, private business travel, interest payments or principal debt service payments. Non-residents can freely take any amount of convertible currency. In other two republics-Kazakistan and Turkmeinstan-there are various restrictions including limits on the maximum amount of foreign exchange which can be purchased for tourism purposes-500 dollars per person in Kazakistan and 1,000 dollars in Turkmeinstan. Foreign exchanged needeed for business travel and remittances for family maintenance are also subject to certain upper limits.

vii) Foreign Direct Investment

CARs allow and encourage foreign direct investment. Legislations protecting the basic rights of foreign investors have been enacted in all the republics. Nationalisation of foreign investment is precluded. All republics provide guarantees that legislations on foreign direct investment will not be changed for a specific period of time. In Kyrgyz Republic, Tajikistan and Uzbekistan inward and outward capital transactions do not require any licensing. There are no limits on inward capital transfers. Foreign equity up to 100 percent is allowed. There are no restrictions on repatriation of foreign investments and profits. Foreign investors are entitled to tax holidays. Joint ventures are free to import inputs without licenses. They can also retain all of their foreign exchange earnings. In Kazakistan and Turkmeinstan, both inward and outward capital transactions are subject to approval from the central bank.

viii) Trade Libralization

Trade policy in CARs has undergone a substantial libralization since 1992. As a result, number of commodity groups subject to import and export licenses has declined significantly in most of the republics. Export and import duty rates have fallen. Exports have also been freed from state orders. Government monopoly in trading agencies has been abolished. Surrender requirements for export earnings which were very high in 1992 have declined steadily. These have been abolished in Kazakistan, Kyrgyz. Republic and Tajikistan. For these republics, there were also no import and export quotas by the end of 1995. All goods can be imported and exported except the negative list which includes items like weapons, explosives, nuclear materials, poisons, drugs, works of art, precious rare earth materials, rare animal and vegetable matter. In some republics like Uzbekistan, this list also includes publications, manuscripts, video and audio material and photographs. Negative lists are prepared for reasons of national security, health, safety reasons, war, violence and nationalism.

However, trade policy is still restrictive in Turkmeinstan and Uzbekistan. Both quantitative and price restrictions are fairly prevalent on imports and exports. In Uzbekistan, new export tariff schedules were imposed for 102 products or product groups. Import duties were also reimposed for many products during 1995.

All the gold produced in CARs is sold at world market prices and central bank either on its own or along with ministry of finance has first right to purchase it at that price. In most of the republics, international trade in gold is prohibited but the central bank of the republic can engage itself in gold transactions with other countries and the IMF. However, in Turkmeinstan, gold transactions abroad can be carried on by license holders.

Notes

1. These include five republics of FSU—Kazakistan, Kyrgyz Republic, Tajikistan, Turkmeinstan, and Uzbekistan.
2. Outside CMEA, India was one of the major trading partners of U.S.S.R. The arrangement was called rupee trade primarily because U.S.S.R accepted Indian Rupee in exchange for goods and services sold to this country.

3. Soviet Ruble was also declared to be worth the same amount of gold. This parity was maintained throughout the TR arrangement.
4. See World Economic Outlook, May 1992.
5. Maintaining a uniform ruble zone was the outcome of the formation of Commonwealth of Independent States (CIS) on December 21, 1991 at Alam-Ata. The successor states of FSU soon after the disintegration of U.S.S.R formed CIS and pledged to co-operate in politics, economics, culture, health, environment,education, science trade and humanitarian issues. With respect to trade and monetary integration, members of CIS sought to minimise the costs of dislocation through unrestricted trade flows based on traditional inter-company links, geographical proximity and transportational networks. As part of CIS charter, members were commited to "maintain a single monetary system and the ruble as their common currency, establish along the lines of a reserve system an independent bank union, pursue common monetary and credit policies, conclude a customs union, establish a uniform external customs tarift, and eliminate internal restrictions on the flow of goods, unify and harmonize the economic laws of the member states of the community" (8,p.154).
6. Eastern European countries as members of CMEA conducted most of the foreign trade with one another and other members of CMEA. Upto 1990, more than two thirds of exports of these countries were accounted for by U.S.S.R. alone. Following the collapse of CMEA trade in 1990, output, employment and incomes fell drastically in these countries. Output alone fell by 16.6 percent in Eastern Europe in 1991. Output fell by 25 percent in Bulgaria; 16.4 percent in Czechoslovikia, 7.5 percent in Hungry; 6 percen in Poland. and 12 percednt in Romania. This decline was mainly due to decline in intra-regional trade. During 1989-92, the decline in the exports of Eastern European countries was as follows: Bulgaria: 82 percent, Romania: 65 percent. Czechoslovikia: 51 percent, Hungry: 26 percent, and U.S.S.R: 44 percent.
7. In 1987, percentage share of total trade in the net material product of CARs was as follows: Kazakistan: 47.6 percent; Kyrgyz. Republic: 63.4 percent; Tajikistan: 58.5 percent; Turkmeinstan: 51 percent, and Uzbekistan: 55.1 percent. The share of interrepublican trade, and the share of trade with Russia in interrepublican trade during the same year were as follows: Kazakistan (87.8 percent, 62.1 percent); Kyrgyz Republic (78 percent; 43.3 percent); Tajikistan (88.3 percent; 45.9 percent); Turkmeinstan (91.7 percent, 47.6 percent); and Uzbekistan (85.8 percent, 55.9 percent).

8. For instance, in 1994 credits from CBR financed 86 percent of budget deficit in Russia. These credits with a maturity of ten years had a nominal interest rate of just 10 percent. The same situation prevailed during 1992 and 1993.
9. It is being reported that currency auctions are not held on scheduled dates and there are frequent disruptions which hamper the growth of foreign trade and investment. Since these countries have no past experience and expertise, an organised foreign exchange market performing clearing, credit, and covering functions has not emerged so far. As such there are no hedging facilities and exports and imports continue to be subject to great exchange rate risks. Furthermore, exchange rate fluctuations are frequent and wild aggravating further the uncertain situations with regard to external payments obligations and export receipts.

Table-I
Currencies and Exchange Arrangements in CARs: 1992-95

Country	Currency				Precent Exchagne Arrangement[b]
	1992	1993	1994	1995	
(1)	(2)	(3)	(4)	(5)	(6)
Kazakistan	Ruble[a]	Teng/Ruble	Teng	Teng	Independently Floating system
Kyrgyz. Republic	Ruble[a]	Som/Ruble	Som	Som	Managed floating system.
Tajikistan	Ruble[a]	Ruble	Ruble	Tajik Ruble/ Ruble	Independently floating system
Turkmeinstan	Ruble[a]	Manat/Ruble	Manat	Manat	Managed floating system.
Uzbekistan	Ruble[a]	Sum Coupons/ Ruble	Sum/Sum Coupons	Sum	Managed Floating system

Source: Exchange Arrangements and Exchyange Restriction. Annual Reports, 1993-96.

a. Russian Ruble

b. As on March 1996

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UZBEK AGRICULTURE NEEDS DIVERSIFICATION

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Over the past seven decades of Soviet rule, although, the economic change, by all measures of economic growth as well as by gross measures of social services, in the Republic of Uzbekistan appeared to be great, but the results, in many other ways, have been more mixed. Modern industry, no doubt, was introduced in the Republic, but the focus of the economy remained agricultural. Uzbekistan belongs to the regions which have the most favourable conditions for the cultivation of various crops. But, Soviet planners, without regard for individual good of this region, built the Republic's economy around a cotton monoculture. With the passage of time, the focus on cotton led in an unbalanced economy unable to meet the basic needs of its own rapidly growing population.

Uzbekistan is now an independent country and is free to chart one's own economic relationships in the world. Its old habits, when it formed a part of the centrally command economy, like dependence on imports of most commodities from Moscow are expected to change significantly in the times to come. The Republic which was trading with Moscow purely in barter terms has now to earn adequate foreign exchange required for its economic and technological advancements.

Being sensitively located and having a large growing population to feed as compared to its neighbouring countries the Republic should get rid of the usual trend of its dependence on imports of basic consumer goods particularly foodstuffs (Table I), and make food-self-sufficiency as the first line of defence for which the Republic has the great potential. In this backdrop the present attempt has been made. The main aim of this paper is to broadly examine the Uzbek agriculture and find out ways and means for its planning needed for the future.

Among the newly independent Central Asian Republics, Uzbekistan has a large mechanised agriculture sector. Its structure of production is dominated by the agricultural and industrial output linked to the agricultural sector. Contributing about 40[1] percent to the states net material product (NMP); this sector (agriculture) of the economy gives employment to a major portion of the country's working population. By 1991 data out of all employment in the Republic, 41.5 percent was due to agriculture.[2]

The greater success of economic growth in Uzbekistan was the growth in cotton production. But, after independence, the Republic is particularly determined to end its destructive dependence upon the munoculture of cotton production.

Cotton has been the focus of the Uzbek economy and it was greatly stepped up during the Soviet period. Before the 1860s only a relatively small percentage of Russia's raw cotton supplies came from Central Asia (7-10 percent), the main suppliers being the United States of America, India, and Egypt. The American Civil War in 1861 cut off American stocks and Russian manufacturers then turned towards Central Asia to supply the deficiency. As the Central Asian cotton was cheaper, Russian merchants tried as far as possible to use it instead of the more expensive Egyptain and American varieties. By the end of the century Turkestan (Central Asia) was supplying 80 percent of Russia's raw cotton. Expansion of the cotton area was encouraged by the Tsarist administration through tax adjustments, favourable credit policy and attractive prices.

The Soviets continued and intensified the Tsarist policy of cotton expansion in Central Asia as is obvious from the directives of the First Five Year Plan. The four Central Asian republics and the southern cotton belt of Kazakistan were, in the words of Plan, 'to be the main cotton base of the Soviet Union.[3] The role of the Central Asian republics in the all-Union division of labour was to serve mainly an area of cotton fibre production....[4] When the First Five Year Plans went in operation, projects for developing food crops in the Central Asian republics capable of satisfying local requirements were not mentioned.[5] The Soviet were determined to make the country independent of imported raw cotton in the shortest possible time so as to save scarce foreign currency. Inspite of their condemnation of Tsarist policy in making Central Asia a 'cotton colony,' they continued this policy themselves. There was no question of consulting the cotton growers on the expanded cotton programme.

Until 1935 cotton producers were paid prices little differing from the pre-collectivization prices. Then, in compensation for the rapid inflation in prices in all consumer goods in early' 30s, they received seed, fertilizer, tea, sugar, and bread grain at low prices, to encourage production of cotton. Advances in money and goods were also made. Another reason for providing grain was to prevent cotton growers from using their irrigated fields for grain rather than cotton- which they were prone to do when uncertain of government food supplies. After 1 January 1935 the delivery of grain to cotton growers was discontinued (and they had to pay the prevailing high prices for it) but, simultaneously, the procurement prices of cotton were raised in Central Asia to almost four times the level of 1926-27. As a result, cotton yields rocketed and production was improved by generous Government supplies of fertlizers to the cotton industry at relatively low prices. Moreover, the government offered huge primiums for cotton delivered in excess of the planned yield.[6] The concessions were made to the cotton producers because the Government wanted to be sure of supplies. It was dealing with an area which had very recently been seething with discontent and even open hostility against Sovietization and could not afford to risk further dissatisfaction on the score of the cotton prices. As a result of improved conditions and prices cotton plans were often overfulfilled. From being a heavy importer of cotton in Tsarist times, the Soviet Union became for the first time self-sufficient in cotton in 1931 and a net exporter of cotton by 1937.[7]

In the post-war years, the Soviet Government continued and even intensified its demands for increased production of cotton in the Central Asian cotton belt. There was large increase in the area sown to cotton but yields also rose owing to improved equipment, good supplies of fertilizers, and a large expansion of irrigation, as appears from the following Table.

Table 2
Central Asia

	1940	1950	1953
Area sown to cotton ('000' ha.)	1244	1442	1599
Cotton production (mill. tons)	1894	2964	3358
Cotton yield (Centners per ha.)	15,0	20,0	21,0

Source: Nar. Khoz. S.A.v 1963g (Tashkent , 1964) Quoted in Conolly Violet, Beyond the Urals, Oxford, University Press, London, 1967, p. 195.

Owing to expansion of cotton on irrigated grounds, all grain sowing, especially rich had been falling percipitately since 1940, as obvious from the figures given in the following table.

Table 3
Sown areas of agricultural crops in Central Asia (in '000' ha.)

	1940	1950	1953	1958
All grain	3030	2487	2169	2259
Rice	100	65	64	37
Cotton	1244	1442	1599	1878

Source: Same as table 2.

In the early 1980s cotton production increased but declined thereafter to the level of early 1970s (Table 4). Cotton as we know, is the dominant crop in Central Asia, and most cotton is grown there. Uzbekistan alone accounted for almost two-thirds of the cotton production in the former USSR and Central Asia as a whole accounted for roughly 90 percent (Table 5). Nearly all of the raw cotton was sent out for processing in other republics of the former USSR, requiring the Uzbeks to pay higher prices for finished cotton goods and to lose potential revenue from those goods that could have been processed locally.

The Republic of Uzbekistan is the world's fourth largest producer of cotton, which accounts for about 40 percent of the gross value of the agricultural production and is grown on both collective and state farms. As almost all irrigated land is irrigated,[8] the rapid increase in agricultural production in recent decades have been attained through an expansion of irrigated areas. According to an International Monetary Fund (IMF) survey,[9] "4.2 million hectares are irrigated from 170,000 Km. of canals." By irrigated areas the Republic gives way only to Russia among the CIS States.[10] Total irrigable area in the countries of the former USSR in 1990 was about 21 million hectares, or 10 percent of arable land, about 45 percent of the total irrigable area was in Central Asia, 20 percent in Uzbekistan alone (Talbe 6). Out of the total cropped area under irrigation in the former USSR in 1990, 25 percent was under grain crops, 21 percent under technical crops, 7 percent under potatoes and vegetables, and 47 percent under feed crops (Table 7). The corresponding figures for Uzbekistan were, 13 percent, 56 percent, 5 percent, and 26 percent. Locally produced grain in the Republic, although a major crop, satisfies only about one-quater of the consumption needs.[11] This is due to the fact that the best farm land was occupied by cotton, sometimes upto 85-90 percent of area was used for this purpose (Cotton cultivation), preventing the cultivation of plant crops.[12] As a result, the consumption of fruit, vegetables, melons went down in the Republic. In Uzbekistan as well as in other Central Asian republics (except Kazakistan), there is less consumption of meat and milk and correspondingly more of bread. In 1990 per capita consumption of meat was 75 k in Russia, about 85 kilograms in Baltic states, and about 30 kilograms in Central Asia.[13] Annual consumption of meat by the rural Uzbek population was reported to be only about 10 kilograms per capita.[14] The consumption of eggs, fish, sugar, and potatoes in Uzbekistan was also much less than the former USSR national average (Table 8). These food shortages are likely to have some effect on health measures, given that anaemia is thought to be one of the contributing factors in infant and mother mortality.[15]

What is surprising here is that even for this lower consumption of food stuffs, particularly of livestock products, the Central Asian republics (except Kazakhstan) had to be dependent on the supply from out side (Table 9). The data given in this table presents a typical situation of Uzbekistan i.e. high degree of dependence on imports. The main reason behind this situation was low production of these republics (Table 10), which was due to overemphasis on cotton production. (Table 11). These are striking discrepanciese and are telling about the availibility and hence consumption of these kinds of nutritious food stuffs needed for the health of the Uzbek people.

The deficiencies found in Central Asia particularly in Uzbekistan was basically the result of the Moscow's policy towards this region. Uzbekistan, thought to be essentially agricultural region, would be more productive, if all the arable land has not been given over to the production of cotton at the expense of other crops.

Besides making Uzbekistan dependent upon the other republics for most commodities, cotton monoculture has caused many other serious problems. Chief among these are environmental problems and their economic and social effects that are seen as contributing to a perceived decline in the quality of life. Neglected for years, environmental concerns in the Republic are now posing a million dollar question.

The massive quantities of fertilizers and pesticides poured upon the land have now poisoned the water tables, ruined much of the land, and are affecting the health of the people in the region. In Uzbekistan, before the demise of Soviet empire, more than 400 kilograms were used per hectare of cotton, and pesticides were used at levels dozens of times higher than in other parts of the former USSR.[16] Against a national average (former USSR) of 1 kilogram of pesticides used per hectare, in Uzbekistan the figure was reportedly 22.5 kilograms.[17] Water with high level of salt, pesticides, chemical fertilizers and other wastes have severely contaminated the fresh water supply. In Uzbekistan, as in other Central Asia republics, the Soviet press once reported that communal water systems do not meet health standards, and large proportions of the population lack drinking water systems, and must drink water straight from often contaminated irrigation ditches and canals.[18] Amu Darya, Central Asia's one of the major water supply, is highly polluted. According to K. Chagylov, the then Soviet minister of health for the Turkmen Soviet Socialist Republic, this river is as[19] "little more than a sewage ditch with more than three billion cubic meters of collector drainage and unpurified industrial waste waters-saturated with pesticides-thrown into the river each year from Uzbek and Turkmen cotton fields."

The heavy use of pesticides, and poor drainage have led to a sharp deterioration in soil quality and increasing salinization of land. As recently reported, about 44 percent of irrigated land was strongly salinated, or roughly 1,644,000 hectares out of total 3,736,000 hectares of irrigated land.[20] In the three most producti ve privinces of Uzbekistan— Dzhizak, Kaskadarya, and Syrdarya- 52 percent, 50 percent, and 40 percent, respectively, of all irrigated land has secondary salinization brought about by excessive irrigation.[21] As salinization in these provinces is increasing, there is great fear that the land may become unusable for agriculture.

The profilgate use of the waters of the Amu and Syr rivers to irrigate cotton lands cut off the water supply to the Aral Sea,which is now terminally drying up, producing thousands of miles of waste land, blowing land-infesting salts for hundreds of miles, and changing the climate of the whole region. Some Soviet scientists have predicted that at the present rate of evaporation,40 cubic kilometres per year, the sea bed will completely dry by the year 2010[22]. Were the Aral Sea to dry up, it was estimated that 5 million hectares of land would be destroyed by salinizzation. Hundred of thousands of hectares of once-arable land have already been ruined[23].

The health of all those who live in the region was severely affected. The incidence of stomach diseases and gastrointestinal infections seen in Central Asia was three to five times the average for the whole country (former USSR); the incidence of cancer was twice as high[24]. Frequently cited in the Soviet press are increasing occurences of typhiod, paratyphoid,and hepatitis due to contaminated drinking water, rising rates of intestinal disease and cancers and increased frequency of anemia, dystrophy and other illness, including a “lag in physical development”, especially among children[25]. The average life span in some villages in the Karakal Autonomous Soviet Socialist Repubic (now Karakalpakstan Republic), allegedly due to environmental devastation, is 38 to 42 years[26].

There was a dramatic rise in the rates of infant mortality. While infant mortality rates declined in nine of the fifteen republics of former USSR between 1970 and 1986, it rose by a dramatic 49 percent in Uzbekistan, from 31 deaths before the age of one per 1000 births to 46.2 deaths[27]. Few years before collapse of Soviet Union, Uzbekistan’s infant mortality rate was among the highest in the developing world[28]. In some regions of Uzbekistan, one infant in ten dies before reaching the age of one year[29]. In some regions, the breast milk of women has a salt content several times higher than normal; pesticides have also been found in women's blood and breast milk[30]. According to recent Soviet reports, contaminated water and pesticides may also be causing genetic damage[31].

All these problems are the fall-out of cotton monoculture. The focus on cotton in Uzbekistan is now being labelled as exploitation from Moscow, a policy that diverted a significant share of resources from the local populations and caused the environmental devastation of their Republic[32].

With the introduction of water fees and the rising relative price of agricultural chemicals, profitability of cotton is declining. Environmental as well as economic considerations imply crop diversification and a shift away from cotton monoculture in Central Asia[33].

Keeping in view the devastating environmental effectsof cotton monoculture on the one side and deficiency of foodstuffs on the other, the Republic of Uzbekistan should adopt such a policy in agriculture which will be environmentally sound and economically viable. For this purpose, the Republic, first of all, should 'reduce the land under cotton' and 'expand the area under other crops', like grain crops, vegetable, melons, and potatoes. Secondly, in order to meet the defeciencies of live stock products, the Republic should pay due attention towards the cattle-breeding, especially the growing of sheep.

For improving the agricultural production and effeciency, the Republic should focus its attention towards land ownership, organisation,and restructuring of state and collective farms, land use, soil fertility, irrigation and the substantially of production, the availability and use of critical agrocultural inputs and the role of agricultural research and technology transfer,including agricultural education, extension and services.

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Table 1

Uzbekistan: Exports and imports of basic consumer goods, 1990

	Units of measurement	Imports	Exports	Excess of Imports (+) over exports (-)
All goods	mln. roubles	5994.7	1978.2	+4016.5
Food stuffs	mln. roubles	1579.7 (26.3)	834.6	+745.1
Meat & meat products	thous.t.	205.9 (13.0)	-	+205.9
Milk & milk products	thous.t.	1117.5 (70.7)	-	+1117.5
Eggs & their products	mln. pcs.	220.0 (13.9)	-	+220.0
Floor	thous.t.	423.2 (26.8)	9.2	+414.2
Cerals	thous.t.	43.1	46.4	-3.3
Macaroni	thous.t.	2.7	0.2	+2.5
Sugar	thous.t.	490.1 (31.0)	-	+490.1
Confectionery	thous.t.	32.8	0.06	+32.7
Oil	thous.t.	0.6	139.1	-138.5
Tinned vegetables	mln. con cans	7.4	40.3	-32.9
Tinned fruit	mln. con cans	1.5	191.3	-189.9
Patatoes	thous. t.	386.6 (24.5)	15.2	+371.6
Vegetables	thous.t.	3.6	641.2	-637.6
Fruit including graps	thous.t.	4.2	184.9	-180.7
Strong drinks	mln. roubles	5.4	42.3	-36.9
Non-food stuffs	mln. roubles	4415.0 (73.7)	1143.6	+3271.4

Note : Figures in brackets show percentages

Source: Derived from the data given in Appendix 10 of Akhmdeov, E., *Republic of Uzbekistan*, Tashkent, 1993, p. 108.

Table 4
Annual cotton production in the Former USSR, 1971-91

	Cotton			Percentage chang from previous year		
Year	Area (mill.ha)	Yield (tons/ha.)	Production (mill tons)	Area	Yield	Production
1971-75 average	2.8	2.73	7.7.	n.a	n.a	n.a
1976-80 average	3.0	2.73	9.0.	n.a	n.a	n.a
1981-85 average	3.2	2.81	9.1.	n.a	n.a	n.a
1986	3.5	2.34	8.2.	n.a	n.a	n.a
1987	3.5	2.31	8.1	0	-1	-1
1988	3.4	2.56	8.7	-3	11	7
1989	3.3	2.61	8.6	-3	2	-1
1990	3.2	2.59	8.3	-3	-1	-3
1991	3.0	2.60	7.8	-6	0	-6

n.a. Not applicable

Source: The World Bank, *Food and Agricultural Policy Reforms in the Former USSR- An Agenda for Transition*, Country Department III, Europe and Central Asia Region, Washington, D.C., 19922, p.178.

Table 5
Estimated percentage shares in area and production of Central Asian republics in 1990

Republic	Area (%)	Production (%)
Uzbekistan	58	61
Turkmenistan	20	18
Tadjikistan	10	10
Kazakhstan	4	4
Kyrghyzstan	1	1

Note: All cotton in the former USSR was produced in Central Asian republics and Azerbaijan.

Source: The World Bank, op. cit.

Table 6

Distribution of agricultural, arable, and irrigable lands in Central Asia (in the former USSR) by republic, 1990

Republic	Agricultural land		Arable land		Irrigable land		Irrigation intensity
	Area (mill. ha.)	Share (%)	Area (mill. ha.)	Share (%)	Area (mill.ha)	Share (%)	(%)
Kazakhstan	197.6	35.5	35.5	15.8	2.31	11.1	7
Kyrghyzstan	10.1	1.8	1.4	0.6	1.03	4.9	74
Tadjikistan	4.3	0.8	0.8	0.4	0.69	3.3	86
Turkmenistan	35.8	6.4	1.2	0.5	1.25	6.0	100
Uzbekistan	26.4	4.7	4.5	2.0	4.16	19.9	92
Total Central Asia	274.2	49.2	43.4	19.3	9.44	45.2	22
Former USSR	557.1	100	224.4	100	20.9	100	9

Source: The World Bank, op.cit, p. 195.

Table 7

Distribution of cropped area under irrigation in Central Asia, by republic, 1990

(Thousands of hectares)

Republic	Grain crops	Technical crops	Patatoes and Vegetables	Feed crops	Total
Kazakhstan	561.5 (28)	197.1 (10)	131.1 (7)	1082.1 (55)	1971.8 (100)
Kyrghyzstan	283.7 (33)	61.5 (7)	35.8 (4)	474.3 (56)	855.3 (100)
Tadjikistan	71.1 (13)	309.5 (54)	33.6 (6)	156.2 (27)	570.4 (100)
Turkmenistan	184.7 (15)	624.9 (52)	68.0 (6)	325.4 (27)	1203.0 (100)
Uzbekistan	423.6 (13)	1863.1 (56)	168.3 (5)	876.8 (26)	3,331.8
Total (Central Asia)	1,524.6 (19)	3,056.1 (39)	436.8 (5)	2,914.8 (37)	7932.3 (100)
Former USSR	4,241.6 (25)	3,636.9 (21)	11,70.6 (7)	8174.1 (47)	17223.2 (100)

Source: Derived from the data given in "The World Bank, op. cit, p. 234."

Table 8

Annual per capital food consumption by Central Asian republics in the former USSR, selected years, 1970-90

(Kilograms)

Commodity,	Kazakhstan,	Kyrghyzstan,	Tadjikistan,	Turkmenistan,	Uzbekistan,	Former USSR
Meat						
1970	50	38	30	38	29	48
1980	56	38	32	44	31	58
1985	58	40	31	41	31	62
1990*	70	51	29	44	31	67
Milk & dairy						
1970	265	172	126	135	150	307
1980	275	177	164	174	185	314
1985	260	182	152	168	180	325
1990	307	266	161	212	210	358
Eggs (nits)						
1970	122	81	44	58	73	159
1980	206	108	79	87	90	239
1985	217	124	104	92	107	260
1990	221	154	111	101	120	258
Fish						
1970	9	6	3	4	3	15
1980	10	6	3	5	4	18
1985	11	6	3	5	5	18
1990*	10	6	4	5	5	17
Sugar						
1970	34	30	23	25	21	39
1980	38	33	24	26	22	44
1985	37	32	25	27	22	42
1990	39	37	28	32	25	45
Vegetable oil						
1970	5	5	8	5	8	7
1980	8	7	10	8	10	9
1985	10	9	11	8	11	10
1990	11	11	12	8	13	10
Potatoes						
1970	94	59	33	223	28	130
1980	86	56	35	23	29	109
1985	89	65	35	31	26	104
1990	85	69	35	26	29	100

Commodity,	Kazakhstan,	Kyrghyzstan,	Tadjikistan,	Turkmenistan,	Uzbekistan,	Former USSR
Vegetab;es						
1970	66	60	65	84	66	82
1980	84	74	95	105	116	97
1985	90	98	91	111	107	102
1990	75	78	95	123	107	92
Bread						
1970	150	144	173	159	160	149
1980	147	149	177	165	1177	138
1985	146	144	178	168	177	133
1990	146	139	167	165	170	133

*Republic level (except Russia) per capita meat and fish consumption estimates refer to 1989.

Source: The World Bank, op.cit., p. 183-4.

Table 9

Net imports of selected livestock commodities in Central Asia, by republic, 1990

(thousands of tons)

	Meat			Milk products			Eggs		
Republic	Intra-USSR	Foreign	Total	Intra-USSR	Foreign	Total	Intra-USSR	Foreign	Total
Kazakhstan	-166.3	-1.8	-168.9	100.9	46.8	147.7	-127.8	-2.6	-130.4
Kyrghyyzstan	0.4	0.1	0.5	31.4	29.8	61.2	16.7	-	16.7
Tadjikistan	18.3	15.8	34.1	128.4	95.8	224.2	43.6	-	43.6
Turkmenistan	38.1	16.6	54.7	133.2	204.9	338.1	50.1	-	50.1
Uzbekistan	128.6	77.3	205.9	506.5	611.0	1117.5	219.0	1.0	220.0
Former USSR	0.0	1,029.9	1,029.9	-37.8	6,889.7	6,851.8	0.0	-255.4	-255.4

- Negligible or none

Source: Derived from the data given in, "The World Bank, op. cit, p 230."

Table 10

Production of selected live stock products in Central Asia, by republic, 1986-90 average

(thousands of tons)

Republic	Meat	Milk	Wool	Eggs (mln units)
Kazakhstan	1,463	5,350	108	4,185
Kyrghyzstan	233	1,071	38	654
Tadjikistan	111	574	5	595
Turkmenistan	98	409	16	321
Uzbekistan	438	22,791	25	2,295
Former USSR	**19,350**	**105,916**	**473**	**83,043**

Source: The World Bank, op. cit., p. 230

Table 11

Share of production of major agricultural commodities and population in Central Asia, by republic, 1986-90 average (percentages)

Commodity,	Kazakhstan,	Kyrghyzstan,	Tadjikistan,	Turkmenistan,	Uzbekistan,	Total
Grain	12.3	0.8	0.2	0.2	0.9	100
Raw cotton	3.8	0.9	10.8	155.7	61.0	100
Sugarbeets	1.6	0.0	-	-	-	100
Sunflower	1.9	-	-	-	-	100
Flax	-	-	-	-	-	100
Potatoes	2.9	0.5	0.3	0.0	0.4	100
Vegetables	4.3	1.8	1.9	1.3	9.2	100
Grapes	2.0	0.7	3.0	22.7	11.0	100
Citrus	-	-	-	-	-	-
Fruits & Berries	2.7	1.4	2.2	0.5	6.5	100
Meat	7.6	1.2	0.6	0.5	2.3	100
Milk	5.1	1.0	0.5	0.4	2.6	100
Eggs	5.0	0.8	0.7	0.4	2.8	100
Wool	22.8	8.0	1.1	3.4	5.2	100
Population	5.8	1.5	1.8	1.3	7.0	100

-Negligible or none

* refers to former USSR

Source: The World Bank, op. cit, p. 194.

MAN, EVIL AND AHURAMAZD ZOROASTIAN APPROACH

Gulshan Majeed

Historically Zoroastrianism[1] belonged to sedantry and unurbanized populace occupying North-Eastern reaches of Khorasan, the region which according to a folk tradition is specially claimed by Ahura Mazda for himself. Though the Sassanian and other medieval sources are generally in favour of Western Iran[2] the inner evidence furnished by the supposed early portions of Gathas when systematically pieced together situate it around Chorasmia north of Sogdiana and Margiana. Mention of Ox as the most favourite animal and description of place names[3] and rivers in the scriptures when studied in the background of the Geographical setting; confirm the findings of scholars like Markwart who in 1900 suggested Chorasmia as the birth place of Zarthustra.[4]

Zoroastrianism evolved from the folk beliefs and practices of the races and cultures who happened to share one geographical space in time. The goddess Nania, who appears as Anahita in the latter Zoroasterian literature, belonged to Elam.[5] Ghirshman helps us to identify myths (atleast two in number) connecting Urartians (a nation of Hurrian descent) and Iran. Elamites and Urartians had a great influence on Iran. The Achaemenian art known throughout for[6] their highly developed civilization, prominently exhibited through their buildings and palaces and other artifacts salvaged from the debris of the time at Susa, Pasargardi and Persepolis in particular, show obvious Assyrian influences. Duchessne-Guillemin associates the Hoama cult of Zoroastrains with the Hoama Varga tribe of the Sakas. He explains the *Hoama Varga* as a compound name, comprising hoama and varga. Hoama is the sacred juice and varga in Khotanese means adoration or cult. In Persian and Sanskrit it means sect or leaf.

Thus Duchessne-Guillemin make us understand the diffusion and popularity of an Zoroastrian cult as early as 5th century BC and as far as Transoxiana and beyond. Hoama varga tribe supposedly were living during Achaemenian period around Aral sea. The Scythians probably believed in a sungod as depicted on the Kuban gold plaque, sungod is here seated on a chariot[8]. There is also a Scythian legend having close resemblance with the tripartite division of the society as propounded by the Avesta. "The legend is about a certain gold objects which fell from the sky and which relate respectively, to the third functiuon (plough and yoke) to the second (axe) and to the first (chalice, probably cultic). It is possession of latter which confers royal powers".[9]

With the help of archaeological records which are still pilling up, a religious scenario of prehistoric Zoroastrian lands has become a little bright. Now many names of gods and goddesses are available to us, their position and status, mode of sacrifice, and nature of offerings to them and the boons they were supposed to bestow could be gleaned by any careful study of these available materials. Till the end of the Achaemenian empire Iranians had come to recognise many gods and beliefs as their own. The Magi, known to Herodotus as one of the six Median tribes had assumed their historical role as the carriers of the message of Zurathustra.[10] At a Kizkapan facade is a diety with four wings, there are also two discs one having a six pointed star and the other a crescent moon which has a human figure on it.[11] This motif could well be compared with the Zoroastrian belief which assigns the moon to man (righteous one) as his abode. There is also a fire alter with two men facing each other with a cap and mouthpiece, they have been identified as Magi. Magi's appear to have practised a solar cult and were generally in the service of the kings.[12]

These and othere beliefs and practices which had by then claimed more or less a permanent place in the peoples Psyche were modified shaped and systematized into one coherent thought by Zarathustra around 600 B C to combat not only the nomadic incursions against his people from farther North East but also to account for the presence of Evil in the world.

The Light and Darkness, the two principle forces[13] in constant hostility to each other in the Zoroastrian system of thought are not the two independent, self sustaining deities sharing the universe in between themselves. The early portions of the Gathas, more particularly the *Haft gathas*[14] make us believe that the presiding deity, the chief and the only God of Gathas is Ahura-Mazda. He is said to be the sole creator; the earth, the sky, the light and the darkness are all because of him. Thus it has two poles. The theological montheism and philosophical dualism,[15] the former forgotten among the maize of books which emerged during Sassanian and post Sassanian period.

Martin Haug distinguishes between the Prophets monotheism and the dualistic views reflected in latter works such as *videvdat*. He expressly states that a separate evil sprit of equal powers with Ahura Mazda and always in conflict with him is entirely incompatible with the theology as preached by the foremost Prophet from Central Asia. *Au Contraire* the views expressed by Sir Lawrence Mill[16] are more based on the aesthetic charms and philosophical niceties of the dualistic interpretations of the scriptures, he writes, "It would be clumsy history of Philosophy which would allow the present noble monotheism of the Parsis to cheat us of the speculatively precious elements of dualism as it existed in their genuine writings".

Dualism is a philosophical necessity based on the assumption of a just God incapable of any evil. The just God of the Zurathustra is the Ahura Mazda who is wise and supreme as the name suggests. Out of the already 'available' gods and entities Zurathustra through elemination and filiation retained Mazda (Hence the name of the religion *Mazdayasna* or Mazdaism- i.e., the worshippers (*yasna*) of mazda) and added suffix Ahura [17] to it. Ahura as the name of a god was already existing in the adjacent Assyria: the prophet only followed an ancient practice of giving gods a compound name.

Ahura is a generic name for any deity-meaning, here, the Lord. It is akin to Asura of the Vedas where it is known as a demon. Ahura is hardly spoken in isolation and in the scriptures never; in the scriptures it has always some suffix associated with it. Mazda means the wise, and all knowing;[18] and is the only God recognised and invoked in the Gathas. Yasna venerates him as:

> Ever since mine eyes are trained indeed
> O'Lord, thee formost I've concieved
> Thou art father of all human kind
> And hence concievable in mind
> Thou first to think and First to shine
> Thou glories into other lights
> Thou self creating wise divine
> To hold our hopes, or holy light
> Thou art the same eternally evolving us continually.

Ahura Mazda is supreme and his supremacy goes unchallenged. His writ runs large over everything he has created. He is not limited by any force external to him. *Ahuna Vairya* hymn invokes[19] Ahura Mazda as the Lord (*ahu*) and the Law (*ratu*). He is the measure of all things. As he is the embodyment of law evil is naturally exiled from his domain. Logically he is incapable of any evil. He is limited by his own law *asha rta*.The God is bound by his purpose. His purpose is ethical and on a higher plane aesthetical in nature. His ideal world is free from any ugliness, therefore, his eperience, which is the world manifested" is a unified whole bordered by his choice to keep it free from evil. Hence the very purpose of his goodness impedes his absolute freedom. "Feedom......means self determination. I am most free when acting for the realisation of a coherent rational purpose, not because my conduct is undertermined." Freedom.....is determined teleologically by the character of my inner purpose...." It is said that, "Asha stands for truth, to which god and the nature constantly respond, even Ahura Mazda cannot violate it" thus the Zoroastrian God, who though supreme, is inadvertantly made the prisonor of his own making.

Body of Ahura Mazda is made of light and sun. In his *vie de Pythagore*[20] "Porphyry alludes to it, "while he (Horamazd's) is like the light his body corresponds to truth". He is the creator; he uttered the word and world shone with light. On the question of mode of Creation in the Mazdean Religion great controversies prevail among its varions schools.[21]

1. Mazdean Orthodoxy : believers in creation in time and space
2. Mazean proper: who believe in some sort of logos theory
3. Zurvanites: who believed in creation *ex nihilo*, placed time above Ohramazd

Ahura Mazd is the creator par excellence , and it is through the very act of creation that the evil enters the world. In order to choose His mode of creation, the self determined Ahura Mazda is left with only three possibilities

a. Mazda creating a being which is superior to his own self. It is a contradiction in terms; an impossibility rejected forthwith.

b. Mazda produces a being equal in status and power to himself; this being absurd

c. Mazda produces a being which has the `limitations of creation' (I have here consciously avoided the word inferior as this conception of 'inferior creation' is foreign to Zoroastrianism)

The possibilities (a) and (b) are absurd. Only the possibility (c) is worth considering. 'c' is 'the creation a step behind its creator; a something which falls short of being absolute. It is this lacking something which is the evil. So the Ahura Mazda is absolved of all the deformity and evil which enters the world through the otherwise best intentions of the *Gathic* God. Basic and sole purpose of the Creator is the good, and by its very implication evil comes into being. It is pleasing to see that the *Gathas* do not identify evil with the matter or with the Semetic religious concept of 'the fall of the man'. Matter is one of the constituents of the creation (material creation); in itself it is neither good not evil.

Haft Gathas in the first instance and then the latter Avesta draw only outlines and speak a language full of mythology. They, more or less, choose to remain uncommitted on the problem of the creation of the evil or about its universal form. They univocally state that Ahura Mazda is the

Creator of Good (hence evil is here by its very implication). Zoroaster was a reformer more concerned with ethical implications of the evil. In the ethical experience the ideal is apprehended as something which doesnot yet exist, but has to be brought into existence by human exertion. There are two orders of 'good'; one, the absolute good admitting no evil, no imperfection and no motion. It is total negation of the other; and other, the ethical good, seeking an ideal through struggle. "That the world as it comes to us in the temporal order, contains imperfection and evil which must be done away with, is a practical presupposition without which morality itself would have no *raison d'etre*[21]. Therefore, the man in the world is on a divine mission. He has been created to help the forces of light and destined to triumph against the forces of darkness.

Man, in the Avesta, is free, quite independent to choose and responsible for what he chooses. His destiny depends on the choice he makes at every moment and in the minutest details of his life between righteousness and the lie. Man is bestowed with the capacity of making a choice and shouldering the burden of his choice. The status of man is well expressed by a pahlavi term, "*azat kam*" which means (that person) whose will is free. Net result of the execution of one's free will determines the class to which one belongs. Those who make the choice and choose to be with *Ahraman* are the bonded labourers. While making the choice the stress is on the acquisition of knowledge and application of reason in the matters of the choice. "Hear my words and ponder them with your enlightened reason": then it is for you to make the final choice. Burden again and again falls on the self consciously made choice.

So the man is Ahura Mazda's own "intimate purpose" to combat evil in the world. The man who helps to achieve this divine purpose achieves his own perfection as well and merges with the body of the Ahura Mazda which is endless light. Man has been created from this End Less Light and is bestowed with the faculties of reason and intelligence. He is Ohramazd's most sought after Creation. Man is in the centre of the Universe. All other beings are simply the means in his attainment of perfection. And it is through him that world again comes to *menok* form (the spiritual stage).

Notes and References

1. According to Gershivitch (Zoroasters Own Contribution 'Journal *Near Eastern Studies*, 23, 12, 1964) a useful distinction can be made between Zarasthustrianism, Zorathustrism and Zoroastrianism Darius was a Zarathustrian, Artaxerxes I was a Zarathustrian and Xerxas presumbly came in between. Zoroastrianism belongs to Sassanian period. In this paper however no such distiction is recognised and Zoroastrianism is used to cover the full range of development from the Gathas to the Pahlavi Books.

A) As a general concensus, dates given by al-Beruni are more acceptable. In his chronology of Ancient nations (*Athar-u-Bakiya*) he writes "From his (Zoroaster's) appearance till the begining of the era of Alexander they count 250 years; which comes to 331+250 = 581. Parsee Scholars like Maneckji Nusservanji Dhalla (*Histroy of Zoroastrianism*-1930) still continue to search old and new material for still more plausible and acceptable date.

B) Nearly every aspect of Zoroastrianism is still a matter of controversy, none more so than the date of Zoroastra himself. The dates suggested for Zoroaster can be arranged into following (i) 7 millianium B.C. (ii) 7th -6th century B.C. (iii) 2nd millinium B.C. Evidence for 7th millenium B.C. rests on three Greek writers. salvaged from "passages in Greek and Latin Literature relating to Zoroastra. *Zoroastrianism* by W.S Fox. R.EK. Pemberton Bombay-28

(a) Diogenes of Laerts (2nd century B.C.) in his lives of the philosophers says Zanthus the lydian (5th century B.C.) counts six thousand years between Zoroastra and the Greek expedition of Xerxes (in 400-479 B.C.) Hence Zoroaster lived in 480 B.C.

(b) Diogenes of Laerte in his above mentioned work writes that "Hermodonis of the Platonoc school, states that the period from the Magians, to the capture of Troy (usually 1200 B.C.) was five thousand years. Hence the date of 6,280 B.C.

(c) Pliny the Elder (23-79 A.D.) in *his Natural History* says that..... "Ecedoxus handed down the tradition that this Zoroaster-lived 6000 years before the death of Plato. Hence the date of 6350 years. The average comes to 6340. H K. Mirza *Outlins of the Parsi History* - Bombay 1947 p. 361 recommends this date as the period when zoroaster flourished.

ii. 7th-6th century B.C. dates are usually called the traditional dates because they appear in the Pahlavi Books of the 9th century A.D. Principal text is Bundahshan (chapter xxxiv). The dates are counted from emergence of religion (in the 9th millennium) to coming of Alexander." The chapter opens with:

Vishtaspa	90
Vohuma	112
Humai	30
Darai	12
Dara	30
Total	**256**

A reign of fourteen years is ascribed to Alexander the Roman. Since he died in 303 B.C. chronology would seem to indicate 595 B.C. for the founding of Zoroastrianism.

W.B. Henning *'Zoroaster, Politician or Witch Doctor,* London 1951. page 85.

H. Lewy the Genesis of the Faulty Persian Chronicle *Journal, American Oriental Society*, 1947, 64, 197.

C) Jack Finegan in his *Archaeology of world religion* writes where Zoroaster lived is as uncertain as when. Sassanian and post Sassanian sources situating zarathustra in Western Iran are contradictory on points of detail. Jackson (*Prophet of Ancient Iran* p. 218) places him in Eastern Iran on the basis of geographical allusions to that region J.H.Gotheil (*classical studies in honour of Nenry Drisler*, 1894-44) refers to Ibn Hurdad Bah (816 A.D.) who mentions "Urmia, the city of Zorasthustra and Shiz in which last city there is a fire temple;" Yaqut (1129) writing about Shiz says that it is a district in Azarbijan; it is believed that this is native land of zarasthust. Both Ibn Hurdad and Yaqut base their findings on Bundahshan (xx) which points out that Daraga river (referred to in Gathas) is *Arian vej* in the direction of Atropatene (Azarbaijan). The Language of the Gathas directs to north west Iran. For further reading see Henning, *Zoraster*, p. 43.

2. Henning, Zoroaster, London, 1951, P 43

3. Hinz, Zurathustra 1961 22 sq Hinz mentions Bactria and Khorasan as the birth place of Zarathustra.

4. Duchessne-Guilleman , Religion of Ancient Iran, (Eng. Tr.) 1962, p 103.

5. Moulton, *Early Zoroastrianism* 1913 cf *Religion in Ancient Iran, op cit.*, p. 106.

6. Ghirshman, Syria 1950, p. 205.

7. *Religion in Ancient Iran, op. cit.*, p 107.

8. Ibid, 107; see also Tamara Rice, *The Scythians*, London 1953

9. Herodotus 4, 5 sq CF Duchessne Guillemin, Ibid 108.

10. *Ancient Iran* ibid 109.

11. Ibid

12. Moulton, Early Zoroastrianism, op. cit., 187.

13. Martin Haug, Essays on the sacred language Writing and Religion of Parsees 2nd ed 1887, p. 303

14. The only direct source on Zoroastrianism Translated by (a) Darmestater, *Sacred Books of the East* (b) W. Hinz Zarathustrs, 1961; Maria W. Smith. Studies in the Syntax of Gathas Phild. 1929. Gathas are five in number and comprise 17 chapters

15. Dr. Iqbal, *Development of Metaphysics in Persia, Bazme Adab Lahore*, 1964, p 5, Martun Haug, op. cit., 303.

16. Sir Lawrence Mill, My own Religion in ancient Persai.

17. For etymology see Max Muller Introduction to *the sciences of Religion* Lect. III p 171; see also *The Essays*, Haug P. 33. see Rawalson, *Ancient Monarchies* p. 98.

18. H.S. Nyberg, *Journal Asiatique*, 1931 page II, "The possibility that the qualifying adjective Mazda, the knower was also applied to the pagan high Gods of the sky must not be lost sight of"

19. James R. Russell, Achaemenian Raj in *R R Cama Oriental Journal* No. 53, 1986, Bombay, P 116.

20. Pettazonni, *All Knowing* God p.

21. Zaehner, *Teachings of Magi* Ch, 2, 3, 4 and 10; Benveuiste, *Persian Religion*, 1929 P 100-109

22. See Zaman-i-Ohramazd p. 233, also Zaehner, *Zurvan*, p. 101, 118.

23. Zoroastrian scriptures are hazy at times confusing and contradictory because of the interpolations and subsequent changes, nature of exegesis and overall mythelogical character. In such studies there is always some scpe for diametrically opposed views, Zoroastrian monotheism is different from the Monotheism of Christianity and Islam.

24. A.E. Taylor, *Elements of Metaphysics*, 1952, GB, p 391.

ZOROASTRIANS AND THEIR FIRE TEMPLES IN IRAN AND ADJOINING COUNTRIES FROM THE 9TH TO THE 14TH CENTURIES AS GLEANED FROM THE ARABIC GEOGRAPHICAL WORKS

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Researches made during the last fifty years have gone a long way to disprove the facile notion that the glorious past of Iran is beyond recall; they have also shaken the common belief prevailing amongst the Zoroastrians that immediately after the fall of the Sassanian empire the adherents of the ancient faith were either ruthlessly put to the sword or were compelled to take shelter in the mountain caves. Besides Avesta and the available Pehlawi works not a small quantity of ancient Zoroastrian lore has been discovered in Greek, Latin, Chinese, Sanskrit, Syriac, Persian and Arabic sources, though the records of the Armenians and the Chinese are yet to be harnessed to be of any appreciable help to the scholars. Greek and Latin sources have already been exploited by Dr. W.S. Fox and Prof. R.E.K. Pemberton and made available in English translation for the Iranologists,[1] while Sanskrit works have been availed of by such an erudite scholar of the Parsees as Prof. S.K. Hodiwala.[2] The rich mine of the post-Islamic Persian literature has been made the object of investigation both by the Orientalists and the Indians. Amongst the latter special mention may be made of my friend Dr. B.M. Gai who has made an exhaustive study of the Persian *Mathnawis* and has presented an illuminating dissertation on the subject.[3] Coming to Arabic sources we find that this rich field still awaits the labours of scholars to bring to light the valuable information deposited in these works. Perhaps the pioneer work was done by two Russian scholars Baron Rozen and M. Inostrazev,[4] while the Zoroastrians themselves generally showed a marked disinclination to study Arabic sources for obvious reasons. A notable exception among the Zoroastrians is the late G.K. Nariman who utilized Arabic material,[5] and emphasized its importance for a study of the subjects connected with Zoroastrianism.[6] But as it is, the work of the Russian scholars as well as the data laboriously collected by Noldeke and G.K.Nariman is a little more than sketchy and unfortunately no serious effort has been made to add to the already collected stock. It need hardly be said that the wonderfully vast range of Arabic literature contains much that could still supplement the information available on this subject. A complete survey of the different branches of Arabic literature with an eye to Zoroastrian subjects would indeed prove of immense help to the Iranologists, but such a gigantic task can only be undertaken either by an institution or a devoted band of workers. For our part we have selected out of the several branches of Arabic, only the geographical works since they speak with authority which is, to a great extent, above impeachment. Again we have taken only one aspect of Zoroastrianism namely the fire-temples, because on the one hand their existence provides ample material which makes a fresh approach to the *Story of Sanjan*[7] imperative, and on the other we find that the fire-temples were the seats of learning and the public libraries which were attached to them attracted scholars from distant places.[8] This humble attempt is made primarily with a view to placing before the scholars the material contained in some of the geographical books written in the Arabic language.

Ibn Khurdadhbih, of Persian descent, a director of the post and intelligence service in Al-Jibal (Madia) wrote about the latter half of the 3rd century A.H. (latter half of 9th A.C.). *Al-Masalik wa'l-Mamalik* which has unfortunately reached us only in an abridged form.[9] Looking at the advantages Ibn Khurdadhbih had we should expect something more on our subject even in his *Road Book*. The almost complete lack of information about the Zoroastrian subjects in *Al-Masalik* can possibly be explained by the fact that besides this work Ibn Khurdadhbih wrote several other treatises one of which is entitled the *Book of the Genealogies of the Persians and their Colonies*.[10] Unfortunately this book is not known to be extant, else it would have furnished us with ample first-hand information about Zoroastrian settlements. We place before our readers such information as is incidentally given by Ibn Khurdadhbih in his *Al-Masalik*. There were eight districts round Isfahan, of which Marbin was one. Speaking about this district Ibn Khurdadhbih observes: "There is a fortress built by Tahmurath and there is a fire-temple in it."[11] Another fire-temple referred to in *Al-Masalik* is the one situated at Ash-Shiz.[12] The temple bore the name of Adherjushnas and was much honoured by the Zoroastrians. Hither walking on foot all the way from Madain (Ctesiphon) every Sassanian Chosro was bound to come as a pilgrim immediately after his accession to the throne, for according to one tradition Shiz was the birthplace of Zoroaster.[13] Yaqut reports that the Persian name was Jis, otherwise Gazn, of which Shiz was an Arabicised form.[14] Our author describing a road from the upper Nushian (near Tibet) to the city of Tughuzghuz (bordering on China) says, "its people are Turks, Zoroastrians worshipping fire also live there."[15] Speaking about the rate of taxation Ibn Khurdadhbih says that he (?) levies one dinar per capita from the Jews and the Zoroastrians.[16]

A distinguished contemporary of Ibn Khurdadhbih is Ibn Wadih Al-Ya'qubi, the celebrated historian and geographer who spent most of his life in Armenia and Khurasan. In about 278/891-92 by compiling his *Kitab Al-Buldan* he struck a new note in emphasising the topographical and economic detail. Like some earlier works unfortunately this too has not reached us in its entirety. Ibn Wadih records his observations about Adharbayjan as under:-

"And the people of (the district of) Mawn of Adharbayjan and its (surrounding) districts are a medley of the Azari Persians and the ancient Jawidanians. The latter belong to the city of Al-Badhdh from which hailed Babak."[17]

It is well known that Babak Khurrami rose in revolt in 200/815 in the far-off province of Azharbayjan and successfully defied the authority of the Caliph of Baghdad for about twenty years. Jawidhan b. Shahrak Al-Khurrami was one of the followers of Babak.[18]

Towards the end of the 3rd century H. (290/903) Ibn Al-Faqih Al-Hamadani, so called from his birthplace, wrote "a curious geographical miscellany" entitled *Kitab Al-Buldan* of which again unfortunately only an abridgment has come down to us. Ibn Al-Faqih discusses the important fire-temples of the time in a passage which we reproduce below in translation.[19]

"In this district (i.e., Al-Farahan, near Isfahan) there is a village called Fardajan, wherein there is an ancient fire-temple. This is one of the fires which the Zoroastrians regard with special favour like the fire of Adhar-khurra, the fire of Jamshid and the fire of Majushnasf which is the fire of Kay Khusraw. The Zoroastrians revere these fires to an extent which is beyond our imagination, (the Zoroastrians say) that with Zoroaster there was an angel who gave witness of his prophethood before Gushtasp and then turned into fire. As regards the fire of Jamshid (orginally) it is the fire of Adharkhurra which was at Khwarizm and was (later on) removed to Karyan[20] by Anushirwan. When the Arabs conquered (Iran) the Zoroastrians feared lest the fire be extinguished and so they divided it into two halves; one part (was left at) Karyan while the other was taken to Fasa.[21] And they said that if one (part) was extinguished the other would remain. As regards the fire of Adharjushnasf, the fire of Kay Khusraw (originally) it was at Azharbayjan and was later on removed to Ash-Shiz by Anushirwan. The fire of Zarathustra which was located at Nayshapur was not removed and this is one of the fundamental fires of the Zoroastrians."

One of the fire-temples which the Zoroastrians regard with exaggerated reverence is at Farahan. Al-Mutạwakkili (?) said, "One of the Zoroastrians who had seen it told me that when Mazdak won over Qubadh to his side he ordered (lit. said) that all the fires except the first three fires should be invalidated (or declared not sacred) and this was accordingly done. He (further) told (me) that (upon this) the fire of Adharjushnasf at Azharbayjan came out and (lit. till) it went to the Adharjushnasf at Azharbayjan and got mixed with it. When they lighted it the (flame of one) Adharjushnasf looked white. When Mazdak was killed, the people restored the fire (that had gone) to Azharbayjan so they continued searching for it till they came to know that it had returned to Al-Fardajan where it continued to give light till 282/895 A.H. when it was destroyed by Barun, the Turk."

Further Ibn al-Faqih observes[22] "Urmiya (in Azharbayjan) is the city (of the birth) of Zoroaster. At Ash-Shiz there is a fire-temple called Adharjushnasf, greatly venerated by the Zoroastrians."

Now we pass on another Arab geographer of Persian origin, Ibn Rustah, a contemporary of Ibn al-Faqih. Ibn Rustah wrote about 300/912 *Al-A 'laq An-Nafisah* which gives testimony to the existence of two fire-temples. Ibn Rustah's description of the Marbin district reads as follow:-

"(The district of) Marbin is adjacent to the district of Jiyy (near the district of Isfahan). One of the ancient kings of Persia probably Kay Qabus passed by it and because of its pleasant climate took a liking for the same. He ordered a grand lofty palace to be built on one of the peaks which overlooked the valley of the Zaranrudh. If a man climbed it he would be able to view the whole district. But this fortress was almost in ruins during the days of Bahman b. Isfandiyar, who built another fortress nearby and also erected a fire-temple therein. This temple exists even to-day and there is fire also (burning) there."[23]

Further on giving a clue to another fire-temple Ibn Rustah oberves:-

"....... there is a village called Akhirin built by an ancient king of Persia. It is (chiefly) inhabited by the Kurda, and there is a fire-temple there venerated by the Zoroastrians who go there on pilgrimage from far-off places."[24]

Abu Dulaf Mis'ar b. Muhalhil, an Arab poet of Al-Yanbu' (in al-Hijaz) was also an outstanding traveller-geographer. This Khazraji lived as a poet at the court of the Samanid prince Nasr b. Ahmad (r. 301-331/ 913-942). In 331-942 an Indian envoy is said to have come to this court on a mission of good-will ....Abu Dulaf went with the mission on its return journey and visited Kashmir, Kabul, Sistan and the Malabar and the Coromandel coasts. On his return, he wrote "'*Aja'ib Al-Buldan......*"[25] The work was later utilized by Qazwini[26] as well as by Yaqut,[27] who however seems to have a poor opinion of it.[28] It is also referred to by some other geographers.[29] 'The 'Aja'ib is not extant and is known to us mainly through the quotations (about 30) in the famous Dictionary of Yaqut.[30] A perusal of the citations as given in the *Mu'jam al-Buldan* shows that the poet-traveller was keenly interested in visiting ancient buildings and talismanic monuments, but unfortunately the passages preserved in the *Mujam al Buldan* are not sufficient to give us a clear idea of the picture. "If you go from Ramburz to Dawraq," says Ibn al-Muhalhil, "you will pass by (many) fire-temples (on the way) situated in the desert wherein there are many wonderful buildings......and at Dawraq there are (ruined) monuments attributed to Qubadh.[31]

Our poet describes at great length the fire-temples of Shiz where he had gone in search of gold mines. From his long narration we give only a few sentences. "At Shiz there is a fire-temple much venerated by them. It is from this temple that fire is taken to the fire-temples of the east and of the west. On its dome there is a crescent of silver which is its talisman... One of the wonders of this temple is that fire has been burning there for 700 years and no trace of ash is found there and fuel never gets exhausted. It was built by Hurmuz......."[32]

During the first quarter of the 4th century H. (10th A.C.), Qudamah, who held office as revenue accountant in the central administration of Baghdad, completed his *al-Kharaj*, which discusses the division of the Caliphate into provinces, the organization of the postal service and the taxation of each district. Qudamah, describing a town called Al-Qarinayn (in the fertile valley of Marw in Khurasan) says:-[33]

"This village is situated in (a desert) on a great mount near the side of the Valley. Its inhabitants are (all) Zoroastrians. They live on the earnings of the donkeys. These Zoroastrians are called *Yarkun*." Minorsky suggests *Barkadzi* as the probable correct form[34]. Again in the country of the Turks Qudamah makes mention of a big villages where he says the majority of people belong to Zoroastrian faith." [35]

The great systematic geographers of the Arabs do not make their appearance until the advent of al-Istkhri, so called from his native place Istakhr (Persepolis). He flourished during the first half of the fourth century A.H. and finally published his *Masalik al- Mamalik* in 340/951 with coloured maps for each country.

To al-Istakhari we owe some useful information about the fire-temples of Fars, to which he belongs himself. We give below an English rendering of his passages on the fire-temples of Fars.[36]

"As regards the fire-temples, there is hardly a district or a city in Fars, except a few, wherein there are no fire-temples. Among the Scriptures the Zoroastrians are the foremost (in respect of numbers). Among the temples there are some which are regarded with special reverence by the Zoroastrians."

Further, al-Istakhri giving a list of some of the important fire-temples says: [37]

"As regards the fire-temples of Fars, there are more than I could count or remember, since there is no village or district or locality except a few, but there are many fire-temples therein. Some of them are held in more reverence than others. Of these (that are held in special reverence) are:-

1. The fire-temple of Karyan, known as Barnawa.

2. The fire-temple of Khurra, which is attributed to Dara b. Dara. The Zoroastrians swear by this temple when they want to emphasize their oaths.

3. The fire-temple near the Jur Lake (pond) called Arim. One who had seen an inscription written on it in Pahlavi, told me that 30,000 dirhams were spent on its construction.

4. A fire-temple is (situated) near the gate of Sabur, and is known as Shabar Khashin.

5. Another fire-temple is near the Sasan Gate of Sabur, known as Junbadh-i-Ka'us.

6. At Kazrun there is a fire-temple known as Jaftah.
7. Another fire-temple at Kazrun known as Kalazan.

8. At Shiraz there is a fire-temple known as Karniyan.

9. There is at Shiraz another fire-temple known as Hurmuz.

10. In a village called Barkan (situated) near a gate of Shiraz, there is a fire-temple known as Masuban.

It is a religious custom of the Zoroastrians that if a woman commits adultery during her pregnancy or during menses, she cannot be purified unless she comes to this temple and exposes herself naked before some priests and then purifies herself with the urine of the bull.[38]

Istakhri's note on the religions other than Islam prevailing in Fars is not without interest to us. "As regards the people of different religions," says the author,[39] "there are Jews, Christians and the Zoroastrians. There are no Sabines or Samaris, nor people belonging to any other religion. The Zoroastrians constitute the bulk of the population and they are greater in number than the people of any other religion. Then come the Christians and then the Jews who are the least."

"As regards the books of the Zoroastrians and their fire-temples and their scriptures and the ways of living (manners and customs) which they had during the days of their kings, all these they have preserved as a legacy, and these are in their possession and they believe in them (i.e., they have retained their religion). And the Zoroastrians in Fars are more than in any other place since this is the centre of their country, their religion and their books."

Al-Istakhri has made keen observations of the different parts of Kirman. His descriptions of the highway robbery of the "dwellers of the Qans mountain ranges" and the good manners of the Balus (Baloch) are interesting. "The mountain ranges of al-Bariz (in Kirman)" observes al-Istakhri, "are full of verdure ..... the inhabitants of this mountain range are good enough not to harass anybody. They have continued to profess the Zoroastrian religion throughout the Umayyad period (41-132/ 661-750) but they embraced Islam when the Abbasides took over the reins of administration."[40]

Ibn Hawqal is noted for his extensive travels which lasted for not less than 30 years. He met al-Istakhri in 340/951 and at the latter's request revised his work and later rewrote the whole book "partly enlarged and partly amended" and issued under his own name *Al-Masalik wa'l-*

Mamalik in about 367/977. Still later he produced another revised edition and published it under the name of the *Surat al-Ard.* Ibn Hawqal has copied verbatim the description of the fire-temples of Fars from al-Istakhri, and hence we do not see any purpose in repeating the long quotation from Ibn Hawqal who, however, supplies some information about the province of Jibal. "The last river," he says, "of Zaranrud which waters the estate called Ragand entirely belongs to the Zoroastrians.[41] Again describing the locality of Qum he remarks: "From Qum to the Qaryat al-Majus (i.e. village of the Zoroastrians) there is a high prosperous road; and in this village the Zoroastrians live without mixing with others."[42]

Now we pass on to al-Mas'udi, "the Herodotus of the Arabs," who has also made his name in geography. This widely travelled historian spent the last decade of his life, compiling the material thus collected into a thirty-volume work which has survived only in an epitome entitled *Muruj adh-Dhahab*, in which the author has devoted several chapters to the sacred houses of different religions. These chapters are:

Chapter 63-Sacred edifices and lofty temples; houses sacred for the worship of fire and idols, etc. (pp.42-54).
Chapter 64-Sacred houses of the Greeks and their description (pp.55-57)
Chapter 65-Sacred houses of the ancient Romans (pp. 57-58).
Chapter 66-Sacred houses of the Slovanians (pp. 58-60).
Chapter 67-The high temples of the Sabians, etc. (pp. 61-71).
Chapter 68-Account of the houses of fire-worship, their construction and the account of the Zoroastrians respecting those houses (pp. 72-100).

Al-Mas'udi, in the 63rd chapter describes the seven most important temples of the world, named after the seven planets. The description of the second temple reads as follows:-

"The second great temple is situated on the top of the mountain at Isfahan; it bears the name of Mars. There were idols in this house but it was cleared of them by Yastasif, the king, when he embraced Zoroastrianism and converted it into a fire-temple. This temple is situated at the distance of three parasangs from Isfahan and is venerated by the Zoroastrians up to the present day."[43]

The fourth temple which is described by al-Mas'udi at considerable length is that called Nawbahar,[44] built by Minochihr at Balkh, by, while the sixth temple in Kawsan constructed by Kans at Farghana.[45] This temple was destroyed by al-Musta'sim bi Allah (r. 640-656/1242-1258). It is significant to note that out of the seven most important temples of the world three are the works of the ancient kings of Persia. Now coming to the 68th chapter dealing specially with the Zoroastrians and their fire-temples at least the first sixteen pages (72086) which contain information useful for our purpose, may be appropriately translated but since it would exceed the space of a paper, we are obliged to give a mere list of the fire-temples described in the Muruj. The author opens the chapter with a note on the origin of fire-worship and then briefly describes the following ten fire-temples which were built before the advent of Zoroaster:

1. Fire-Temple at Tus.
2. Fire-Temple at Bukhara called Bardasura.
3. Fire-Temple at Ash-Shiz.
4. Fire-Temple at Arran.
5. Fire-Temple near the pond of Shiraz.
6. Fire-Temple Sijistan, called Karakarkan.
7. Fire-Temple at Kusjah.
8. Fire-Temple at Qumas, called Jarish
9. Fire-Temple at Kanjdeh.
10. Fire-Temple at Arjan.

He then proceeds to describe the fire-temples constructed by and after Zoroaster; among these are:

1. The fire-temple at Nishapur.
2. The fire-temple at Nasa al- Bayda (in Fars).
3. Zoroaster asked the king Yastasaf (Gushtasp) to search for fire which was revered by king Jamshid. The former made thorough search and found it in the city of Khawarizm from where it was removed by Gushtasp to the city of Darabgird (in Fars). This fire-temple is known in our days, that is to say 332/943 as Adharjuy which means the "fire of the river, because Adhar is

one of the names of fire and Juy is one of the names of the river in ancient Persian. The Zoroastrians respect this fire-temple more than any other. The Persians report that when Kay Khusraw set out to fight the Turks he passed through Khwarizm and enquired about this fire. When he was shown the fire he honoured it and prostrated himself before it. It is also said that Anushirwan was the man who removed it to al-Kariyan. With the advent of Islam the Zoroastrians feared lest the Muslims should extinguish it, so they left a part of it at Kariyan and removed the other part to Nasal al-Bayda', in the district of Fars with the idea that one part would remain if the other was put out.

4. The Persians have a fire-temple at Istakhar in Fars, venerated by the Zoroastrians. Formerly it was an idol-temple. Himaya, the daughter of Gahman son of Isfandiyar removed the idols and converted it to a fire-temple. Then she removed the fire from it and so it became desolate. People in our time, i.e., 332/943 say that it was a mosque of king Solomon, son of Divid. I have visited this place....

5. In the city of Sabur, in Fars there is a fire-temple much honoured by them; it was constructed by Dara, son of Dara.[46]

6. In the city of Jur in Fars....there is a fire-temple built by Ardshir b. Babak, I have visited this temple. At present it is situated on the bank of a stream flowing there. It is wonderful. One of the festivals is celebrated there and it has become one of the pleasure resorts in Fars. ....In the middle of the city of Jur there was a wall which the Zoroastrians called at-Tirbal,[47] it was destroyed by the Muslims......

7. Al-Mas'udi, then describes "the water of fire" built by Kurash at the birth of Jesus Christ....

8. Ardshir on the second day of his conquest over Fars built a temple called Barnawa.

9 Sabur b. Ardshir b. Babak constructed a fire-temple near the gulf of Constantinople in the Roman (Byzantine) territory. This

Sabur is called the "Sabur of the Army" and built this temple when he laid siege to Constantinople. This temple survived right up to the time of Mahdi (r. 158-169/775-785) when it fell in ruins....

10. Buran, the daughter of Iberviz (Parviz) built a fire-temple at a place called Istiniya which is situated near Baghdad in Iraq.[48]

Al-Mas'udi closes the description with the following sentence:-

"And the fire-temples venerated by the Zoroastrians are numerous in 'Iraq, Fars, Kirman, Sijistan, Arran, Hind, Sind and China. We have omitted them, mentioning only the famous ones".[49]

Al-Ishraf wa at-Tanbih is another work of al-Mas'udi that has come down to us. It does not contain any detailed account of the Zoroastrians or their fire-temples. Some information regarding the ancient books of Zoroastrians has been recorded by al-Mas'udi in the present work, but this portion has already been placed before the Iranists by Mr. G.K. Nariman.[50] In the course of his account of the rebellion of Babak Khurrami, al-Mas'udi mentions some of the problems discussed in his two books namely *al-Maqalat fi Usual ad-Diyanat* and the *Kitab Sirr al-Hayat*. The incidental information regarding the topics discussed in these books is of importance to us. On the one hand it gives us the idea of almost a colossal loss to our knowledge of Zoroastrian problems in those countries while on the other hand it gives us an impression of the situation as it stood during the fourth century (10th). "We have described" says al-Mas'udi,"[51] in our books *al-Maqalat* and the *Sirr al-Hayat* the *Muharramiyya*, the *Kudhkiyya* and the *Kudhashahiyya* sects and those from among these sects who are settled at Isfahan, at Burj, Karaj of 'Abu Dulaf, at two Zazis-Zazz of Ma'qal and Zazz of 'Abu Dulaf-in the district of Warsanjan, at Qasam, Kudhashat dependencies of Saymara...... in the countries of Sirwan and Arbujan, the dependencies of Masanadhan and at Hamadhan, at Ma'al-Kufa and Ma'al-Basra, Adharbayjan and Armenra at Qum and Qashan, Ray and Khurasan and all the other provinces of the Persians. We have also described in these books the controversial points between these sects as also the differences between the Muhammira, Mubayyida and the Mahaniyya sects. We have mentioned our polemical discussions with those of them whom we met at these places......" It is hoped that an intensified search might unearth these two treaties of al-Mas'udi.

We now pass on the al-Maqdisi who wrote in about 385/995 his geography on entirely independent lines and chiefly from his personal observations on diverse provinces. His production *Ahsan al-Taqasim fi Ma'arifat al-Aqalim* is certainly the most original of all those which the Arab geographers composed; his description of places, of manners and customs, of products and manufactures, and his careful summaries of the chracteristics of each province in turn, are indeed some of the best written pages to be found in all the range of medieval Arab literature.[52]

Al-Maqdisi's report on the general condition of the Eastern Clime reads as follows:-[53]

"There is much knowledge and theological erudition (in the Khurasan side of the Eastern Clime). The preachers enjoy wonderful reputation and they have abundant wealth. There are many Jews and Christians and Zoroastrians belonging to (different) sects."

Al-Maqdisi sums up his account of the people of al-Jibal in the following words:-

"There are more Jews than Christians and the Zoroastrians are numerous."[54] "Fewer Christians and not many Jews and Zoroastrians" is the verdict of al-Maqdisi as regards Khuzistan.[55] Our author seems to be very unfavourably inclined to Shiraz, the beloved city of Hafiz. His poignant remarks and pointed observations are summarised below:-[56]

"Shiraz...... there is neither a learned man nor a literature there and their rulers are tyrants. You will not find any Zoroastrian wearing a badge (meant for non-Muslims) and no respect is shown to a man with an (academic) gown...... The gown (of the *Masha'ikh*) is (freely) used by the beggars and the Christians and...... the customs of the Zoroastrians are preferred.:.....[57] and the markets are decorated during the festivals of the Zoroastrians on the occasion of the *Nauroz* and *Mihrjan*, and they use the Persian Calendar."

More surprising it is indeed to be told that "In this province there is a large number of Zoroastrians, while of dhimmis there are both Christians and Jews".[58] This indeed is a really important statement inasmuch as it pertains not to any distant place like Khurasan or Tabaristan or to any ancient Zoroastrian centre like Azharbayjan or Fars, but to `Iraq, the centre of Muslim empire.

The *Mu'jam al-Buldan* (written in 621/1224) of Yaqut Hamawi, one of the most celebrated Muslim geographers, describes in alphabetical order every town and place of which the author could obtain any information. It is more or less a compilation from earlier writers, but illustrated by the author's own extensive travels and literary erudition. It is rather to be regretted that owing to lack of space we have not fully utilized this voluminous dictionary. The work may perhaps be profitably undertaken by an enthusiastic Iranologist. However, with a view not to leaving this famous geographer totally unrepresented we give below a few lines from his stupendous work:-

"Ardistan, a city between Qashan and Isfahan...... has a fortress round every quarter and in the middle of every fortress there is a fire-temple. The city is said to be the native-place of Nawshirwan. It abounds in buildings built by Nawshriwana and Qubadh......"[59] One of the finest cities of Khuzistan and Isfahan is Idhaj.[60] The bridge of Idhaj is one of the wonders of the world.... In Idhaj there is an ancient fire-temple where fire continued to burn till the time of Harun al-Rashid (r. 170-193/786-809). Karkuya is a city of Sijistan. There is a fire-temple venerated by the Zoroastrians.[61] Yaqut writes a very long note on the temple at Balkh[62] and traces the history of the Barmakis.

Al-Qazwini (b.600/1203, d.682/1283) wrote a book in two parts on cosmography, which gives interesting notes on the products and the commerce of diverse towns and provinces.[63] In his *Athar al-Bilad wa Akhbar al-'Ibad* al-Qazwini has given some scattered infomation on subjects connected with Zoroastrianism. We give below some of his statements in connection with fire-temples:- "Kakuya is an ancient village in Sijistan; there are two big domes there. It is related that they are there from the time of Rustam. There is a horn on each one of these domes; these horns (are so constructed as to) incline to one another, to resemble the horns of a bull. That it has remained (intact) from the days of Rustam is no small wonder. Underneath these two domes there is a fire-temple of the Zoroastrians, suggesting that a king (generally) builds near his house a 'place of worship'. The fire of this temple is never extinguished. There are many servants who enflame the fire by turns. The chief sits with his servants at the distance of twenty arm-lengths from the fire and covers his mouth......and with the silver pincer places the tamarisk wood of a span's size. When the fire begins to subside he throws in it one log after another. This fire-temple is held in great reverence by the zoroastrians.[64] Hudijan, one of the villages of Khuzistan, is considered sacred and is venerated by the Zoroastrians who have built there (several) fire-temples. Ibn-Muhalhil says, 'the reason is that once at this place the Persians fought with the Indians when the former scored a decisive victory over the latter. Since then this place is considered auspicious by them and today there are wonderful remains of customary buildings (like palaces, fire-temples, etc.) and the treasures are searched for in this place as they are searched for in Egypt"[65] "Karyan, a small city in Fars has a fire-temple venerated by the Zoroastrians. Fire is taken from this temple to all the fire-temples in the world"[66] "Jur is a pleasure resort in Fars ......there are palaces built by Ardshir Babak. In the midst of the city there is a high building called Tribal.......on the top of this building there is a fire-temples; opposite the city there is a mountain from which water is taken right up to the city......."[67] After reproducing the statement of Ibn-Muhalhil on Shiz, al-Qazwini says, "Geographers other than al-Muhalhil say that at Shiz there is the fire-temple of Adharkhas, which is a great fire-temple according to the Zoroastrians. It is said that Zoroaster went away from Shiz to the mountain Sabtan with a view to hide himself from the people. He brought a book called Basta which is in Pehlawi and which cannot be understood except with the help of a commentator...... In our days they say that there are Zoroastrians in Sijistan."[68] Al-Qazwini describes the famous temple of Balkh[69] but, as he calls it, the temple of the idols, falls outside our scheme. Lastly our author says about Istakhr: "It is an ancient city in Fars, it is not known who has built it.......There is a great fire-temple of the Zoroastrians in it......."[70]

'Abu al-Fida (b. 672/1273) a typical writer of the later Muslim school of Geography, belonged to the ruling house of Harat. His work *Taqwim al-Buldan* based upon earlier works and his extensive knowledge, displays a desirable balance in the selection of information. As explained in the introduction,[71] the author is more particularly concerned with the exact location (by giving latitudes and longitudes) and the fixation of the pronunciation and the scientific as well as the common classification of towns into the climes, and as such he evinces little interest in the religion and the habits of different people and their places of worship. Throughout the book there are hardly any references to the mosques and only one solitary reference to the fire-temple. Harat (this is the pronunciation as fixed by 'Abul Fida) in Khurasan is described in the following words by the above author:

> "......the mountain is at the distance of two parasangs (from Hirat) and there is neither fuel nor pasture......on the tcp of this mountain there is a fire-temple called Sharisk......"[72]

We propose to end this account of the fire-temples with the mention of Ibn Fadl Allah al-'Umari (700/1300-749/1348) who composed his stupendous encyclopaedia entitled *Masalik al-Absar fi Mamalik al-Amsar in twenty* volumes. The first volume inter alia contains section is devoted to the fire-temples. In the first instance al-'Umari enumerates the seven most important temples of the world, for three of which the credit goes to the Zoroastrians (namely those in Isfahan, Farghana and Balkh). The author introduces the section in the fire-temples with a brief note on the origin of fire, etc., and then notes the following five famous fire-temples:

(1) The fire-temple of Tus.
(2) The fire-temple of Bukhara
(3) The fire-temple at Darabjird in Fars......Bakari says that this is the most important temple.
(4) The fire-temple at *Istakhr* in Fars. It is said that this fire-temple was in ancient times the mosque of Solomon.....
(5) The fire-temple at Jur...... It is situated on the bank of the stream which is the recreation ground of its people. In the middle of Jur there was a wall called Tirba, venerated by the Zoroastrians. The Muslims demolished the wall.

We have tried to collect scattered facts and place them for what they are worth before the scholars working on the history of Zoroastrianism.

If further investigations are carried on in the different branches of Arabic literature these may prove a rich mine of data for some of the problems connected with Zoroastrianism.

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1. Passages in Greek and Latin Literature relating to Zoroastar and zoroastrianism by Fox and Pemberns
2. *Parsis in Ancient India*, by Prof. Hodiwala.
3. Lif in pre-Islamic Iran as gleaned from Persain Mithnawis, by Dr. B.M. Gai. A thesis in the Bombay University Library, No. 1047.
4. See his Eassay translated by G.K.Nariman, under the title of *Iranian Influence on Muslim Literature* Bombay 1918, (pp. 1-91).
5. Ibid, pp. 121-104; 142-158; 163-205.
6. See *Journal of the Iranian Association*, Vol. 7, No. 6, pp. 201-210; No. 7, 225-231; No. 8, pp. 274-277.
7. The *Qissa-i-Sanjan* has been examined and translated by various scholars; e.g., Eastwick's Translation in the JBRAS, Vol, I, pp. 167-191. Hodiwala's *Studies in Parsi History*, pp. 37-117; recently the Qissa has been again put to a critical scrutiny by Lieut. Colonel M.S. Irani and Mr. B.N. Bhatena.
8. See JBRAS, Vol. 15, pp. 40-45.
9. I.Kh p.20.
10. *Hudud*, p. 14.
11. I.Khurdadhbih, p. 119.
12. There is a great controversy about the birth of Zoroaster. Dr. J.J. Mody has discussed this question in great detail in the Cama Oriental papers, pp. 129-239. The learned scholar has utilized almost all the available sources including Persian and Arabic. Of the latter he has consulted Mas'udi, Yaqut and Abu al-Fida.
13. M. Bull, Vol. 3, p. 353.

14. I. Khurdadhbih, p. 31,

15. I. Kh., p. 111

16. Ya'qubi, Leyden, p, 272.

17. For details of this revolt and Babak see Z.D.M.G., vol. 23, p. 539 (Babak, seine Abstammung und erstes Auftreten by Flugel, p. 531-42.

18. I. al-Faqih, p. 247.

19. It is a town in Fars celebrated for its fire-temple, from which the sacred fire anciently preserved there was distributed far and wide by the Zoroastrian priests, See Le Strange, p. 255.

20. In the 4th century A.C. this was the second city of Darabjird district in Fars (le Strange, p. 290)

21. I. Faqih, p. 286.

22. I. Rustah, al-'Alaqan Nafisah, Leyden, p. 153.

22b. *Al-Fiqih* Ibi

23. I. Rt. p. 155.

24. N. Ahmad, p. 23.

25. Qazwini, pp. 30; 62; 69; 70; 81; 82; 130; 186; 266; 267; 302; 333. The list is not intended to be exhaustive.

26. M. Bul., vol. VI, p. 712.

27. M. Bul., vol. 3, p. 356.

28. e.g., I. Faqih, pp. 110; 234.

29. M. Bul., vol. 2, p. 618.

30. M. Bul., vol. 3, 355.

31. Qudama-l-Ja'far, p. 209.

32. Hudud, pp. 328-262.

33. Qud., p. 262.

34. Istakhari, Keyden p. 100.

35. Ist., pp. 118-119.

36. Cattle urine was used as purifier in some cases cf. "Cattle-urine used in the purification of corpse bearers," see pp. 226-27, Sir Jamshedji Jijibhoy, *Madresa Jubilee Volume.*

37. Ist., p. 139.

38. Ist., p. 1644.

39. I. Hawqal, Brill p. 366.

40. I. Hql., p. 404.

41. Al-Mas'udi, *Murujal-Dhahab*, 1865, Paris, vol. 4, pp. 47.

42. M.Mj., IV, 47.

43. M.Mj., IV, p. 50.

44. Loc. cit., p. 78.

45. For more details see Qaz., p. 121.

46. M. Muruj, IV, p. 86.

47. Ibid.

48. *Iranian Influence on Muslim Literature*, pp. 182-187.

49. *Tanbih wa-al-Ishraf*, Brill, p. 353-54.

50. Le Strange, p. 13.

51. Maqdisi, p. 323.

52. Ibid., p. 394.

53. Ibid, p. 402.

54. Ibid., p. 439.

55. The author again refers to the prevalence of Zoroastrian customs on p. 421.

56. Maq., p. 441.

57. Maq., p. 126. Ranking, p. 202.
58. M. Bul., vol. 1 p. 198.

59. Ibid., p. 416.

60. Ibid., vol. 4, p. 263.

61. Ibid., pp. 817-18.

62. L. St., p. 15.

63. Qaz., p. 163-64.

64. Ibid., p. 186.

65. Ibid., p. 162.

66. Ibid., p. 121.

67. Ibid., pp. 267-68.

68. Ibid., pp. 221-22.

69. Ibid., p. 99.

70. A. Al-Fida, p.2.

71. Ibid., p. 455.

72. 'Umari, vol I, pp. 222-223.

MUGHAL RELATIONS WITH CENTRAL ASIA

Abdur Rahim

I

The ambition to possess Trans-Oxiana burned fiercely in the hearts of the Mughal Emperors. So keen was their interest in those delectable and `wonderfully beautiful' regions that to recover them Babar went to the length of "sacrificing" his religious scruples.[1] Humayun, though he attempted to regain them during his father's lifetime, had later on other misfortunes to reckon with. Akbar was prevented from moving by the great power of 'Abd Allah Khan.[2] Jahangir was too lazy to leave the charm of Kashmir and Lahore for a hazardous march through the passes of Hindu-Kush. Shahjahan, in spite of advice to the contrary by such able ministers as Sa'd Allah Khan and `Ali Mardan, attempted to subdue

> "The Tartars of Farghana, from the banks
> Of the Jaxartes, man with scant beards
> And close-set skull-caps, and those wilder hordes
> Who roam o'er Kepchak and the northern wastes"

with the troops of India, but only succeeded in justifying the name of those mountain ranges by sacrificing thousands of Rajputs.[3]

Aurangzeb, profiting by his own experience as the commander-in-chief of his father's forces, had neither part nor lot in Central Asia, and had, like the British Indian Government ...."not a Central Asiatic but an Indian policy."[4]

As this essay deals only with the diplomatic relations of the Empire, the details of Shahjahan's fruitless expedition are omitted except in so far as they affect his foreign policy.

In the beginning of Akbar's reign diplomatic intercourse was not very frequent with 'Abd Allah Khan, because between India and Turan were the kingdoms of Balkh under Nazr Muhammad, *Badakhshan* under Mirza Sulayman, and Kabul under Mirza Hakim. With the absorption of the first two by 'Abd Allah and the latter by Azar, the frontiers of the two Empires became contiguous and intercourse more frequent.

In 1572 A.D., arrived the first embassy from 'Abd Allah Khan Uzbeg with a letter and presents. The letter is nowhere to be found but Abu'l Fadl as usual gives in his own style the following purport: "To recall ancient relations and renew friendship in order that, with the help of such divine glory, he might act vigorously against other princes of *Turan.* Another object was that he might repose in peace and be without apprehension of the strokes of world-conquering armies."[5] He further says: "For greater security and success he sent presents to Munim Khan Khanan and Mirza Koka Khan A'zam in order that they may exert themselves to lay the foundation of friendship." It is also stated that the ambassador was well received, and returned after a time with presents from Akbar for the sovereign. But in the account of the second embassy from Turan, Abu'l-Fadl in referring to this embassy says: "As His Majesty had thoughts of conquering his ancestral lands, no one was sent along with him (Hajji Iltamish) in order that the correspondence might be severed."[6]

Another embassy arrived in 1577 A.D., Abu'l-Fadl as usual says that the first ambassador, Hajji Iltamish, being much impressed with the power of the Empire, induced 'Abd Allah Khan to send another embassy to 'the world-conquering Khadev'. The purport of 'Abd Allah's letter was that Akbar "should lead an expedition from India to Persia in order that they may with united efforts release 'Iraq, Khurasan and Fars from the 'innovators'."

So rapidly had 'Abd Allah's power increased that it was now impossible for Akbar to ignore him and he was compelled to send Mirza Fawlad on a return embassy with a reply[7] to 'Abd Allah's letter. Akbar wrote, says Abu'l-Fadl, that "the dynasty in question [Safavis] was specially connected with the family of the Prophet and on this ground he could not regard the difference in law and religion as sufficient ground for conquest. He was also withheld from such enterprise by old and valued friendship. As in 'Abd Allah Khan's letter the ruler of Iran had not been mentioned with honour, His Majesty conveyed to him valuable admonition in reproof thereof."

Akbar was not actuated by any friendly feeling towards Persia, but in reality he was much alarmed at the growth of 'Abd Allah Khan's power and territory and wished to avoid, as far as possible, being a party to his ambitious designs. Moreover, a strong Persia was essential to keep the restless Uzbegs in their proper place.

The object of Mirza Fawlad's mission must have been to get firsthand information about the real power of 'Abd Allah and to explore the possibility of an alliance in case the dissolution of Persia was inevitable. As there could be no other basis for such alliance except sectarian bigotry, Mirza Fawlad was a proper instrument[8] for working on the religious susceptibilities of the Turanians.

In 1557, Mirza Sulayman was compelled to leave the kingdom of Badakshan by the intrigues of his grandson Mirza Shah-Rukh and his crafty mother, Khanum, and came to India.[9] Akbar and his principal nobles went out of the city to receive him and he was conveyed to the royal palace with great pomp and show. The great respect shown to him was probably due to his association with Babar and Humayun[10].

The object of Mirza's visit was to seek Akbar's help against his grandson, but Akbar was, too clever to back a loser.

While Mirza was still in India, Khanum, alarmed by his intrigues, sent Rahim Beg and Mirza 'Ashiq to negotiate a marriage and a political alliance with Akbar. Akbar, it seems, was not averse to such proposals, for Abu'l-Fadl says, "He made the envoys joyful and then dismissed them".[11] 'Abd Allah Khan and 'Abdi Khwajah were sent "to soothe and encourage Badakshanis". Badakshan, apart from its local dissensions and rivalries, was in imminent danger of being attacked by 'Abd Allah Khan Uzbeg and, as Akbar was not sure of his brother's attitude, probably Sikinah Begam was sent to Kabul to give advice to Hakim Mirza on this subject.[12]

The envoys sent to Badakshan returned in 1579 with Mir Nizam from Mirza Shah-Rukh and brought Khanum's daughter.

Meanwhile Mirza Sulayman, disappointed by Akbar's duplicity, left like all Turanians ostensibly for the *hajj* but in reality to gain foreign help. Sometime later he appeared in Persia to seek the help of *Shah Isma'il II*. The Shah gave him some "'Iraqi'" troops, but as Isma'il died shortly after, Mirza was deserted by the Persians. Shah-Rukh had in the meantime appealed for help to Akbar, who actually organised an army under Yusuf Khan, Sa'id Khan and Raja Bhagwandas in 1580. Sulayman on being deserted by the Persians appealed to Abd Allah Khan Uzbeg and Mirza Hakim[13]. This frightened Shah-Rukh who suddenly came to terms with his grandfather.

There is some confusion between Badauni and Nizam ad-Din about this embassy. Lowe translates a somewhat ambiguous passage[14] thus: "In this year an ambassador came from. Trans-Oxiana with a letter containing assurances of friendship from 'Abd Allah Khan Uzbeg; the Emperor sent Mirza Fawlad Birlas with Khwajah Khatib, who was a native of Bukhara, to accompany him with presents and gifts. The seal of the letter was as follows:

"When we are friends with one another
Sea and land are free from confusion and evil".

Badauni puts it in the events of the 24th year (987 A.H.) Nizam ad-Din, however, in the events of the 25th year (988 A.H.) says:"Khwajah Khatib and Mirza Fawlad were sent to Trans-Oxiana this year". Although Nizam ad-Din's dates are to be accepted with some caution, in this case he seems to be correct. The ambiguity is removed if the passage is translated thus: "In this year ~Abd Allah Khan Ubzeg's loving letter came from Trans-Oxiana. He sent (back) Mirza Fawlad with Khwajah Khatib, who was a native of Bukhara, with presents..."

The *Akbarnamah* tells us that Mirza Fawlad was first sent to Turan in 935 A.H. Very likely he returned in 987, and was again sent in 988, as Akbar was mobilizing to help Shah-Rukh and probably wanted to avoid a conflict with 'Abd Allah. It was therefore necessary to come to some sort of provisional understanding with regard to Badakhshan and Qandahar and the object of Mirza Fawlad's mission, as previously stated, was "to soothe the Turanians". But it was difficult to soothe 'Abd Allah, who was dreaming of a vast Central Asiatic Empire and hoped to revive the past glories of those regions. Not only had he designs on Badakhshan and Balkh but he was watching for a favorable opportunity to descent on Khurasan, and to retrieve the terrible disaster that befell Shaybani.

As Qandahar had been a source of perpetual differences between the Mughals and the Safavis, so was Khurasan a veritable bone of contention between Persia and the power that ruled Mawara'n-Nahr. The friction was due considerably to the absence of effective political boundaries between Khurasan and Mawara'n-Nahr. One of the oldest Arabic geographers, Ibn Khurdadbih, tells us that a portion of the left bank is included in the boundary of Mawara 'n-Nahr.[15] Under the Samanids, Ghaznavids and Timurids both the provinces were one *wilayat.* `Abd Allah Khan consequently considered it as a rightful appendage to his ancestral kingdom, and its occupation by Isma'il as mere usurpation.[16] During Tahmasp's life-time it was difficult to conquer it; after his death for some time `Abd Allah's hands were full with the subjugation of Balkh and Badakhshan; he was also afraid of a combination between Akbar and Persia.

In 1585 A.D., 'Abd Allah Khan, urged on by his more ambitious son, 'Abd al-Mu'min, suddenly fell on Badakhshan, and both the Mirzas fled to india.[17] Shah-Rukh, subsequently, married Akbar's daughter.

Next year this success was followed by the annexation of Balkh, whose ruler, Nazr Muhammad, with his three sons, Qambar, Shabi and Baqi, sought refuge at Akbar's court, where suitable *mansabs* were bestowed on them. Akbar, it seems, had for some time been contemplating intervention in Central Asiatic affairs.[18] He had no hope of conquering his "ancestral lands" during `Abd Allah's life-time, but he wanted to save Badakhshan if possible, and thus maintain a sort of buffer State, more or less under his influence. A road fit for wheeled traffic was consequently constructed through the Khyber Pass.[19] This alarmed `Abd Allah and he occupied Badakhshan before Akbar could move. `Abd Allah, foreseeing Akbar's intervention, stirred up trouble among the tribesmen of the North-Western Frontier, through his agent Jalala, the religious fanatic of the tribal country.[20] This Jalala paid several visits to `Abd Allah Khan and `Abd al-Mu'min and was propbably in their pay. So serious was the situation for a time that Akbar himself had to move to Attock to supervise the operations.[21] It was during these operations that he lost one of his best friends, Raja Birbar.[22] For a time even communication with Kabul was interrupted, until Raja Man Singh gained a victory over the tribes. Even after the victory of Ali Masjid "brave Officers" like Mubarak Mohani, Ghazi Khan, etc., had to be sent to conduct the caravan from Trans-Oxiana in which were `Abd Allah's ambassador and Nazr Muhammad, the ex- ruler of Balkh. Akbar was at that time afraid of an attack by` Abd Allah Khan on Kabul and possibly on India[23].;`Abd Allah Khan too, on his side, was afraid of Akbar's mobilization and wanted to form an alliance against Persia instead of fighting Akbar.

In 1586 A.D., while Akbar was at Attock, 'Abd Allah Khan sent Mir Qurayash with present and a letter. He also sent Habib-the master pigeon-fancier, who was famous throughout Turan among pigeon sportsmen-with the choicest pigeons of that country. After some hesitation and delay, Akbar received the Mir on the first of March. Abu'l-Fadl says: "A princely festival was arranged in the *Diwan-Khanah* which had been recently erected, and the ambassador was exalted by prostrating himself at the holy threshold. He produced before His Majesty the rarities of that country." 'Abd Allah's letter is given in *Majma'al-Insha*[24]. Akbar in his reply also discusses all the salient features, and from these it is not difficult to judge the object of this mission. Abu'l-Fadl, however, gives the following reason: "When the world-conquering standards reached the banks of the Indus and the design of marching to Zabalistan became conspicuous; and the Khyber Pass, which used to be traversed with difficulty by horses and camels, had been made passable for wheels, and a bridge had been made over the Indus, there was a tremendous agitation in Turan. For fear of the rapid march of the World's Lord the gates of Balkh were usually kept closed. 'Abd Allah Khan, the ruler of Turan, had the enlightenment and discernment to have recourse to deprecatory behavior and tendered supplications. He sent Mir Quraysh who belonged to a noble Sayyid family...."

'Abd Allah Khan no doubt was alarmed, but Abu'l-Fadl has rather exaggerated the Khan's fears.[25] The real fact was that the opportunity for which he had been long waiting was near at hand and he could not afford to have his lifelong dream of conquering Khurasan shattered by an attack from India. Mir Quraysh was consequently sent to gain Akbar's co-operation or, failing that, neutrality, by offering him Zamindawar and Qandahar.

The Turanian ambassador was dismissed with great honours. Hakim Hamam was sent "to impress on `Abd Allah Khan the choice qualities of the Emperor. He was also to study the mind of high and low and report thereon." It seems that while inwardly Akbar had received `Abd Allah's proposals with favour, outwardly he tried to impress the Khan with his friendly feelings towards Persia. The door of negotiation for an alliance was thrown open by Hakim Hamam's mission. Mir Sadr Jhan was also sent to offer belated condolence on the death of Iskandar Khan. The delay is explained by Abu'l-Fadl: "But as at times there were thoughts in His Majesty's mind of conquering that country no one was sent"

Akbar sent a long letter,[26] in which, with regard to 'Abd Allah's threat to cut off relations owing to the change in Akbar's religion, he says: "With regard to the intimation about stopping letters and intercourse, though in the eyes of reason silence is better than speech in such matters, yet we shall overlook this." To impress 'Abd Allah with his religious zeal, a desire is expressed to conquer the Portuguese "infidels" who "have lifted up the head of turbulence and have stretched out the hand of oppression upon the pilgrims to holy places-may God increase their [the pilgrims'] glory"

The following hypocritical remarks are very interesting in the light of the events that followed: "But as we have heard that some officers of Persia were disloyal to their sovereign and had cast away the firm hand of fidelity, which had been the means of their exaltation, and had committed various improprieties, it passed into our mind that we should appoint to that region one of our sons–from whose forehead there streamed auspicious rays and in whose horoscope were the lights of justice–and not undertake any work until that was disposed of. At present when the Sultan of Turkey, disregarding the treaties and agreements made by his father and grandfather, has looked to the ostensibly feeble condition of Persia and has several times sent his troops there, we shall, passing over the circumstances of deviation and looking to the relationship of that dynasty to, the Prophet, proceed thither and help them. Assuredly ancient things must be borne in mind, especially at this time, when we hear the ruler of Persia has dispatched able men of that country with presents and with prayers for help. It befits our sublime spirit that we should fling out the reins of interest towards `Iraq and Khurasan." An appeal is also made for Abd Allah's co-operation in this work, and hope is expressed of their meeting in Persia. About Hakim Hamam he says, "........... in your noble audience, it will be as if we and you were conversing directly."[27]

In fact, the threat to help Persia was a direct challenge to 'Abd Allah, and the words attributed to the Sultan were probably indirectly applicable to the Khan as well. This challenge was a sort of sanction behind the negotiations. There is no doubt that an agreement was concluded with the Khan on the division of Persia, for Abu'l-Fadl in his letter to the Hakim says".........His Majesty has turned his attention to the conquest of Turan, but is prepared to change the course of his conquest towards the island of *Farang* if a satisfactory treaty is forth-coming (from 'Abd Allah) without any further delay."

That the agreement was reached is proved by the following remarks in connection with Hakim Hamam's return: "He conveyed the praises and supplications of the ruler of Turan, who represented that the conquests of Hirat and Khurasan were due to the blessed influence of the World's Lord."

In his second letter Akbar accuses 'Abd Allah of breaking the treaty. Obviously, one of the clauses was that the Turanians should desist from their intrigues among the tribesmen of the North-West Frontier of India. 'Abd al-Mu'min in his letter to Murad III also refers to this alliance in the following words: "The Padshah of India has strengthened the bonds of friendship with this magnificent House by sending Hakim Hamam, one of his chosen courtiers, with presents, gifts and a loving letter, and has formed an alliance."[28] All doubts are removed by the following passage from Imam Quli's letter to Jahangir: "As between the noble kings—dwellers of Paradise—'Abd Allah Khan and Akbar Padshah, a treaty and alliance for the conquest of the road to holy places had occurred,—due to this religious alliance and unity between the sovereigns a great portion of 'Iraq and Persia and the whole of Khurasan were conquered............[29]

It seems 'Abd al-Mu'min was not satisfied with the terms of this alliance, for they restricted his aggressive activities both in Persia and on the Indian border. He also suspected Akbar of having financed Muhammad Zaman's rebellion in Badakhshan and so once more he started his old game among the tribesmen. He also dispatched an envoy to Akbar with a letter. The *Akbarnamah* records his accidental drowning in the Jhelum. It is also stated that, though the Khan's letter perished with the envoy, rumours said that it contained a demand for Badakhshani Aymaqs who had come to the Court. [30]

With Hakim Hamam and Sadr Jahan, 'Abd Allah Khan sent Ahmed 'Ali Ataliq with a letter and presents. 'Abd Allah must have been aware of Yadgar Sultan's departure and the object of his mission; consequently we find someone permanently representing him in India, for when in 1594 Ahmed 'Ali died,[31] his place was soon taken by Maulvi Husayn, who also brought a letter from the Khan apologizing for 'Abd al-Mu'min's improper demand for Aymaqs.[32] The Maulvi, too, died in Lahore next year when Akbar was away in Kashmir.[33] The *Tadhkiraht-i-Muqim Khani* informs us that at this time Abd al Mu`min was openly plotting against his father and probably 'Abd Allah's policy of friendship with Akbar was not acceptable to the young hot-head. His old friend Jalalah paid him another visit and, though Abu'l-Fadl tells us that he was not well received, yet his return was followed by a great tribal rising which was not limited to the Roshaniyyah. An expedition sent to Tirah *via* the Khyber under Quli Khan being unsuccessful, another under Husayn

Beg 'Umayri had to be sent *via* Bangash. Zayn Khan Koka too was sent to Kabul with a large force.[34]

Khwajah Ashraf Naqshbandi was sent to Turan to protest against 'Abd al-Mu'min's activities. Shaykh Husayn of Lucknow accompanied the mission as the custodian of presents. It seems 'Abd Allah Khan in his letter had suggested that the Hindu-Kush should be the boundary between the two Empires. He must have also accused Akbar of breaking the treaty, for Akbar in his reply[35] says: "It would have been fitting for us to begin the exposition of the ways of peace, and the demonstration of the rights of friendship, seeing that since the commencement of the dawn of this auspicious morning the whole of our righteous practice has been-contrary to the ways of former rulers—to follow the path of amity and association with the various nations of mankind. As Your Majesty has entered on this subject, it is proper that at this time you should give your attention to instances of such conduct. For example, when at this time the ruler of Persia, relying upon former ties, sent Yadgar Sultan Shamlu to us to ask for help, we did not consent." He goes on about Shah-Rukh's unsuccessful request for a fief in Kabul and Qandahar, the rebellion in Badakhshan and other examples of his good faith. About the treaty he says: "As the keeping of one's word is indispensable to a great mind, we desired that when the treaty of peace had once been made it should be preserved."

It seems 'Abd Allah Khan had protested against the mobilization of troops and the continued presence of Akbar near the Indus, for Akbar says; "Although the climate and hunting of this country are favourable to us, we have determined to proceed to Agra so that the mouths of the praters should be shut."

Akbar also expresses regret on the death of 'Abd Allah's ambassadors, and the accidental drowning of 'Abd al-Mu'min's messenger.

About the treaty obligation he says: "The glorious compact and agreement which has been ratified by skilful ambassadors one after another is fixed on our mind."

About 'Abd Allah's projects for further conquest he says: "What you have written about certain expeditions having been postponed till the arrival of Ahmad 'Ali has been understood." The letter closes thus: "May every desire of your heart be accomplished. Every assistance due from us will be rendered."[36]

Before Khwajah Ashraf's return both 'Abd Allah Khan and 'Abd al-Mu'min died, and Akbar immediately reverted to his old policy of friendship towards Persia, for he had hopes of profiting from the civil war in Trans-Oxiana. He sent help to Badi' az-Zaman,[37] but he had been captured and executed before the help could reach him. This act was the cause of unfriendly relations with Baqi Khan and later, when one Ahdi Khwajah, who had instigated an unsuccessful attempt on Baqi's life, fled to India, he was well received.[38]

Unfortunately, owing to Salim's attitude, Akbar's dreams of conquering the "ancestral lands" could not be realized.

It my be here pointed out that Akbar's attitude towards Central Asia was similar to that of the British until the beginning of the Great War, for, in spite of his dreams of conquering the "ancestral lands." he all along followed an Indian and not a Central Asiatic policy.

Like all the sovereigns of his House, even the happy-go-lucky Jahangir was not immune from the wild dreams of conquering his "ancestral lands".[39] He was, however, too lazy to follow an ambitious foreign policy anywhere. Even the usual relations with the rulers of Mawara n-Nahr were not maintained, due probably to his desire to be more closely allied to Persia.

Before coming directly to Jahangir's relations with Turan, a few words may be said about the dynasty that was then ruling there.

In 1567, Yar Muhammad Khan, driven from his (khanate) by the advancing Russians, sought refuge in Trans-Oxiana. Iskander Khan gave his daughter Zuhrah Khanum in marriage to Yar Muhammad's son, Jan Khan,[40] who later on distinguished himself in the wars of his brother-in-law, 'Abd Allah, and was, after the conquest of Khurasan, made the governor of Nishapur. With the death of 'Abd al-Mu'min, the last of the Shaybanis, the unfortunate land of Trans-Oxiana was once more plunged into a terrible civil war.

'Abbas, who had been biding his time, occupied the whole of Khurasan and ever since then Mashhad—that spiritual home of the 'Abbasids, and the resting-place of the patron saint of Khurasan—has been the new Mecca of Shi'ahs. The Amirs of Bukhara, in their helplessness, approached Jan Muhammad Khan to accept the throne. but he declined on the ground that though he was a descendant of Chingiz, yet his son Din Muhammad, being related to the Shaybani family, had a better right.[41] Din Muhammad, a few days[42] after his selection, fell in a battle with 'Abbas near Hirat, and his two sons, Imam Quli and Nazr, made their escape, thanks to the pluck of Nazr's mother. Din Muhammad was succeeded by his brother Baqi Muhammad, who frustrated 'Abbas's designs to subjugate Trans-Oxiana by inflicting a terrible defeat on the Persians, from whence the Shah barely escaped with his life. After Baqi's death, the Shah's attempt to interfere once more in the affair of Turan, by helping Wali Muhammad, was also unsuccessful.[43]

In 1611 A.D., Imam Quli ascended the throne of Bukhara, and in a fit of generosity assigned the *Wilayat* of Balkh to his younger brother Nazr Muhammad-an act which he lived to regret. For the first ten years of his reign, there is no record of any diplomatic intercourse with the Court of Lahore. In the beginning of 1621, the mother of Imam Quli Khan sent to Nur Jahan a letter "containing expressions of goodwill and dues of acquaintanceship." Next year Nur Jahan in return sent Khwajah Nasir, an old and trusted servant of Jahangir, with a letter and some "rarities" of India.[44]

This exchange of civilities led to further relations, and shortly after Imam Quli sent a regular embassy with a letter and presents. It is not difficult to see why Khwajah Nasir was sent in 1621, for at this time relations with Persia were becoming more strained, and Jahangir could only look to the Turanians for support in case of an open war. It is not improbable that Imam Quli too, on his side, sent the first ambassador to warn Jahangir against the impending attack and to pave the way for further negotiations.[45] No mention of these events is to be found directly in any Indian history: they all try to make out that Jahnagir was quite unprepared and blame the Shah for his treacherous attack on an old friend. There can be little doubt that the Shah was carrying on vigorous intrigues in the Deccan and on the North-West Frontier while Jahangir was at the same time taking some precautionary measures; but the internal state of the Empire was, owing to Nur Jahan's intrigues, so bad that not much could be accomplished.[46] Jahangir, possibly in one of his drinking bouts, was inadvertent enough to enquire from the ambassador about Imam Quli's beloved, which enraged the Turanian, who replied that his master was free from earthly desires and looked down on worldly possions. At this Jahangir is said to have smiled, and remarked ironically: "What has your master seen of the world that it has filled him with such disgust?"[47]

Shortly after this incident Jahangir sent Mir Sayyid Birkah on a return embassy to Turan.[48] the object of this embassy is nowhere stated, but apparently it was new Jahangir's desire tc form an alliance against Persia; but Imam Quli was so offended with the incident referred to above that for six months he did not grant an audience to the Mir. After this he was only received informally during hunting. The Khan bestowed all the presents on his servant Rahim—much to the surprise of the ambassador. Next morning the Mir presented a jewelled sword on behalf of Jahangir as a personal present for the Khan. When Imam Quli tried to draw the sword it could only be drawn from its scabbard with great difficulty; at this he remarked to the ambassador: "Your swords are very difficult to draw."[49] Only this one," replied the ambassador,"because it is a sword of peace; had it been a sword of war it would have leapt out from the scabbard." This fine repartee pleased the Khan, and he became very friendly with the ambassador. Mir Birkah was dismissed after a few years with great honour and Khawajah Abd ar-Rahim[50] and Khwajah Hasan were sent to India by the Khan as his ambassadors[51]. The ambassador were received with great pomp and show by Jahangir, probably to impress Aqa Muhammad, the Persian ambassador. Taz Khan received them at Kabul and gave a magnificent entertainment. Bahadur Khan Uzbeg[52] was sent with a robe of honour and jewelled dagger. The *Iqbalnamah* says: " His Majesty thought the coming of Khwajah `Abd ar-Rahim auspicious and ordered all the great nobles and ministers to go out and receive him. Up to now no one so exalted and holy as the Khwajah had come to India. "Jahnagir exempted the Khwajah from all the court etiquette for ambassadors.[53] Rs.30,000in cash, another robe of honour and an elephant with a silver howdah were bestowed on him. Nur Jahan sent his fourteen silver trays full of delicacies and sweets in vessels of gold which were all bestowed on him.

The ambassadors brought a letter[54] in which the Khan says a great deal about the noble and esteemed descent of his ambassadors. It also alluded to the old anti-Persian treaty in the following words[55]: "As between the noble kings—dwellers of Paradise—`Abd Allah Khan and Akbar Padshah, a treaty and an alliance for the conquest of the road to the holy places had occurred, due to this religious alliance and unity, a great portion of `Iraq and Persia, and the whole of Khurasan, was conquered and up to this day the swords of the soldiers of Turan are stained with the blood of the braves of Iran. After his [`Abd Allah's] death my noble father tasted the cup of martyrdom in the course of a battle near Hirat, leaving an obligation on me to avenge his death by invading Persia. Now that Your Majesty has also decided to follow this path of Sunnah and the precedent of your illustrious father, this noble task can be best accomplished together."

The ambassadors were in India during the disturbance which followed Jahangir's death, and witnessed the coronations of Shahryar, Bulaqi and Shahjahan. 'Abd ar-Rahim died in India and Shahjahan ordered Afdal Khan to arrange a befitting funeral. So great was the Khwajah's influence with Jahangir, that on his recommendation the offense of 'Abd Allah Khan Firoz Jang was pardoned.[56]

Jahangir's death and Nazr Muhammad's indiscretion altered the situation considerably , and Shahjahan did not adopt an offensive policy against Persia,[57] though he attempted to form an alliance with the Turks and Turanians little later.

II

Shahjahan was the most ambitious sovereign of his House; and it was natural that the wild dreams of conquering the "ancestral lands" should reach their culminating point in his time.

His reign opened with an unfortunate incident which for the first time openly disturbed the amicable relations existing between the two countries ever since the treaty of friendship between 'Abd Allah and

Akbar. Nazr Muhammad the restless and ambitious brother of the peaceful and generous Imam Quli, unable to satiate his lust for conquest in the North, decided to violate his frontiers established by the above treaty, and to descend on the province of Kabul.[58] He had overestimated the disturbances following Jahangir's death and a recent setback of the Mughal troops on the North-West Frontier of India. He had also expected an easy conquest, but as it came to pass he had been reckoning without his host. At the very outset, his plans were upset by the gallant resistance of the border outpost of Zuhak under Khanjar Khan. Unable to reduce it, he decided on storming Kabul before the arrival of reinforcements; but here too, the besieged offered a stubborn resistance, and on the approach of a relieving force under Lashkar Khan, Nazr Muhammad beat a hasty retreat. More reinforcements were subsequently sent under Mahabat Khan.[59]

No mention of this attack is made by Muhammad Yusuf in the *Tadhkirah* but the Indian histories supply full details, and mention the arrival of a swift courier with an apologetic letter from Imam Quli.[60] Shahjahan, not being quite secure, took advantage of this olive branch and in 1628 sent Hakim Haziq and Sadr Jahan with presenths worth 1½ lakn of rupees. He also dismissed Sadiq and Hasan, the son and brother of the late Khwajah 'Abd ar-Rahim. It is possible he was looking forward to a day when conditions in Persia would permit an attempt for the reconquest of Qandahar. The letter sent with Hakim consequently expressed a hope for "a lasting alliance on religious grounds".[61]

Although he adopted a conciliatory attitude towards Imam Quli, yet he supplemented it with a hostile demonstration against Nazr Muhammad at the frontier outpost of Barniyan in May, 1629, for he was not certain of the peaceful intentions of the Khan, whom he suspected of intriguing among the tribesmen of the North- West Frontier through the governor of Kalmard.

Next year, Hakim Haziq returned with a friendly letter from the Khan, but Sadr Jahan was left behind. Nazr Muhammad also sent an ambassador with presents worth Rs.50,000 in addition to many horses, camels, mules, etc. Shahjahan bestowed Rs. 30,000 on Waqqas, and Rs.10,000 on his son Mu'min. The object of the embassy was to apologise for the Khan's attack on Kabul.

In February, 1633, Shahjahan in return sent Tarbiyyat Khan to Balkh.[62] A letter written by Afdal Khan on behalf of Shahjahan was also sent. It acknowledged the apologies sent through Hajji Waqqas, but a regret was expressed that such an unwarranted attack should have taken place on a friendly Sunni Power. Satisfaction was also expressed at the Khan's offers of help for punishing the Qizilbashes. An assurance was conveyed that action would be taken when the appointed hour arrived. The letter was full of religious bias, which Shahjahan was trying to exploit in support of his designs against Persia.

In 1635 A.C., Tarbiyyat Khan returned with an ambassador from Nazr Muhammad who brought presents worth Rs. 70,000 and the usual supply of horse, mules and camels. He was dismissed after a while with a robe of honour and Rs.20,000. Rewards were also bestowed on his many relations. Shahjahan in return sent Mirak Husayn with presents worth 1 1/4 lakhs of rupees,a letter and an elephant with a silver howdah to Nazr Muhammad.[63]

Shortly after 'Ali Mardan's surrender of Qandahar, Shahjahan sent Prince Shuja and Khan Durran with a large body of troops to Kabul as a precaution against Shah Safi's expected attack. In 1639, the Emperor himself moved to Kabul. These movements frightened Nazr Muhammad, and he appealed to Imam Quli for help. Indian histories are emphatic that the Emperor had at this time no hostile intentions against Balkh, but the Central Asian historians do not agree with this, and allege that Shahjahan, overestimating the differences between Imam Quli and Nazr, considered it an opportune moment to launch his attack on Balkh.[64] Imam Quli, however, forgave his brother and came to Balkh and from there sent Hajji Mansur[65] to Shahjahan with a letter in which he said: "Although friendly relations have existed between the two Houses from time immemorial, yet, if the Shah, disregarding old friendship, has decided on an attack we and our brother are prepared to receive him." It is further stated that, frightened by this united front, Shahjahan repented of his rashness and wrote back: "I had only come to Kabul for hunting but if my brothers do not like it I will go back."[66] Lahori, however, says: "Nazr Muhammad, frightened at the movement of Imperial troops towards Afghanistan, had recourse to deprecatory behavior and sent Hajji Mansur with presents"......etc., etc.[67]

Whatever secret intention Shahjahan might have had, he now adopted a conciliatory attitude, due, probably, more to Shah Safi's expected attack on Qandahar— Which then seemed very imminent-than to a combination of forces by Nazr and Imam Quli.[68]

Next year, Nazr Muhammad sent an ambassador to Dara Shikoh with presents and a letter. The ambassador was also received by Shahjahan.[69] The object of this embassy is nowhere given, but it seems that Nazr Muhammad was again intriguing against his brother, who had now almost lost his eyesight, and Nazr probably wanted to gain Shahjahan's support in case of civil war. Imam Quli also sent Uzbeg Khwajah with a letter and gifts. Probably the object of this embassy was to counteract Nazr's intrigues.

Mir Birkah, that old and versatile diplomat, was once again sent to Turan, apparently on a return embassy, but in fact to study the real state of affairs. Now that Qandahar had been recovered, there was no longer any need to be friendly with the Turanians; on the contrary, the designs to conquer Mawara'n-Nahr were put into active operation. Imam Quli must have seen through Shahjahan's double game, for, in spite of Mir's diplomacy, he abdicated in favour of Nazr Muhammad[70] and on the 3rd of November, 1641, left for Mecca to avoid civil war. The people of Bukhara, however, did not accept Nazr Muhammad's rule in the same spirit of resignation as his brother had done. There was open rebellion under Baqiyuz, the *ataliq* of Nazr's son, Bahram Sultan. 'Abd al-Aziz was sent to oppose him, but he also joined the rebels.

Shahjahan watched these events with malicious pleasure, and started mobilising troops under the command of Asalat Khan. In the summer of 1645 he suddenly captured Kahmard on the advice—it is alleged-of Khalil Beg, the commander of the fort of Ghoiband. Further operations were delayed, however, owing to a tribal rising in the Khyber which was promptly put down by Raja Jaswant Singh.[71] Meanwhile, in Trans-Oxiana 'Abd al-'Aziz gradually got the upper-hand against his father, who, finding himself in a desperate position, had no other alternative except to approach his old enemy Shahjahan for help.[72] Shahjahan received Nazr Mohammad's envoy with great show of friendship, and in course of an audience on the 11th January, 1646, granted the Khan's request for help by sending a favorable reply to his "petition".[73]

Prince Murad was appointed to the chief command, but in fact the real arrangements were in the hand of 'Ali Mardan Khan. Other tried officers like Quli Khan, Raja Jai Singh, Debi Singh, Najabat Khan, Rustum Khan, Rajrup, etc., were all ordered to the front with all their forces.[74] Success was very rapid in the beginning, and fort after fort fell, till Asalat Khan, on the 22nd June, occupied Qundus, thus reviving the memories of Babar, whose soul must have felt elated at the success of his descendant at a place around which the tangled skin of his fortune was so often torn and rewoven. At this time, Shahjahan sent a letter to Prince Murad congratulating him on the success of his compaign, and instructing him to be very careful in his treatment of Nazr Muhammad. A sentence about Balkh is capable of double meaning; in the light of subsequent events, it contained a veiled hint about the necessity of occupying that city.

When Murad and 'Ali Mardan reached the vicinity of Balkh, they sent Ishaq Beg with Shahjahan's letter to Nazr Muhammad. Ishaq, it is alleged, noticed certain unusual measures of defence in the fort, and advised the Prince to occupy it forthwith. Next morning Murad moved his camp just outside the city walls. Nazr Muhammad, much alarmed, sent Churchak Beg with a letter; but Murad insisited on his personal appearance. Nazr Muhammad again excused himself, and sent his two sons Bahram and Subhan Quli. Murad, still unsatisfied occupied the city and once again sent an invitation to Nazr Muhammad to come out of the citadel and to meet him. Nazr, suspecting a trap, escaped with his two sons Subhan and Qutlaq, while Bahram and 'Abd ar-Rahim were detained by the Mughals. Murad made a state entry into the city on the 7th July, 1646. He appointed his favorite, Shukr Allah 'Arab, as the governor of Balkh.

Nazr Muhammad, hotly pursued by Bahadur and Asalat, succeeded in making good his escape to Persia where he, like his uncle, was well received by the Shah.[75]

Shahjahan, on learning of Nazr's flight to Persia, sent Jan-Nisar

Khan to dissiuade the Shah from intervening in Central Asiatic affairs.[76] He also sent Mir 'Aziz with an apologetic letter to Nazr Muhammad. Shahjahan attributed the misunderstanding to the inexperience and youth of the Prince, and assured the Khan of his friendly intentions. He further promised to send Nazr Muhammad's family anywhere he wished. Nothing definite was, however, promised to him with regard to his lost territory.[77]

Meanwhile Murad was replaced by Aurangzeb, for governing those lawless regions was infinitely more difficult than conquering them. This task was rendered almost impossible by the mutual jealousies of the new regime, due greatly to 'Ali Mardan's unpopularity and the influx of the "infidels". These difficulties became greater and greater every day in spite of a severe defeat inflicted on 'Abd al-'Aziz by Aurangzeb. Nazr Muhammad appeared on the scene, too, with some "'Iraqi" troops lent by the Shah, and soon opened negotiations with Aurangzeb. Peace having been concluded,[78] Aurangzeb started his ill-fated homeward March in October, 1647. Thus ended the wild dream of the Mughal Emperors. It brought nothing but disaster, famine and death both to the Indians and the Turanians. Muhammad Yusuf b. Khwajah Baqa, on his way to India the following summer, saw strewn all along the route animal and human bones; at place there were piles of them.[79]

It was not only the loss of men and money which Shahjahan suffered in this expedition, but the Empire lost all its prestige in Middle Eastern affairs. The sword of Damocles hanging over Turan ever since the days of Akbar in the shape of an Indian invasion, with all the vast resources of a great Empire, now vanished for ever. Shah 'Abbas was quick to seize this opportunity, and fell on Qandahar before the Indians had time to recover.

These events were followed by a wave of unrest throughout Afghanistan and the North-West Frontier of India, which could never be quite stamped out and was one of the cause of the disruption of the Empire. After the Balkh campaign and the loss of Qandahar, the power of the Mughal Emperors began dwindling in Afghanistan, and the tribes got a long lost opportunity to foment dissensions and intrigues for their own ends by playing off the Mughal administration against the Persians and *vice versa*. The Abdalis having allied themselves with the Persians, the

Ghilzays had to accept Hobson's choice and fell back on the Mughals for support against their age-long enemies. This perpetual warfare encouraged the inherently lawless tendencies of the population, and broke the thin web of administration so ably cast by Akbar over that delectable country. Afghanistan gradually slipped into anarchy and confusion which even the strong hand of Aurangzeb could not control. This unrest also dried up the healthy stream of young Afghan recruits to the Mughal army, which henceforth could make drafts only on the Muslim man-power of Northern India, which was then not very considerable.[80]

Truly speaking, the decline of the Mughal Empire begins from this time. History furnishes another example, but, unlike Napoleon's, the Mughal Empire continued its chequered career for ancther two hundred years because it was built on deeper and firmer foundations.

This disastrous expedition had other far-reaching results as well. It left behind in Central Asia terrible famine and plague which devastated the country and weakened the power of the Astarkhani dynasty. It also ruined the trade and commerce which had for generations flowed into India from Bukhara and Samarqand. The disturbed state of affairs in Afghanistan especially through the passes of the North-West Frontier of India dealt it a further blow. The occupation of Qandahar by the Persians and the virtual state of war that followed it throughout Aurangzeb's reign, except for a brief space of a few years, diverted the trade and commerce from the Bolan Pass[81] to the ports of Southern India, considerably to the advantage of the English and with great loss to the Mughal treasury, a loss which could not be stopped owing to the absence of a navy.

III

Subhan Quli-the ruler of Balkh—was the first among foreign kings to recognise Aurangzeb, for Aurangzeb had left a lasting impression of his mettle on the Turanians during Shahjahan's ill-fated expedition to those regions. Moreover, Subhan Quli had no finer scruples, for his brother Qasim Sultan had met same fate as Dara and Murad.

In the beginning of 1071 A.H., Kalij Beg, a servant of Subhan Quli, brought 27 horses and a present of fruits from Balkh for Aurangzeb, and was suitably rewarded. The first regular embassy arrived two months later, Ibrahim Beg presented his credentials on the 26th Jamada'th-thani. He was introduced into the royal presence by Mir Baqi and produced the Khan's letter and presents. The presents consisted of horses, camels, mules, gems and "Central Asiatic rarities". Rs.15,000, a robe of honour and a jewelled belt were bestowed upon the ambassador.[82] A house was also assigned to him, and one of the royal servants was appointed to look after his comforts. The ambassador, however, like many of his predecessors, died after a few days, in spite of the best medical attendance provided by Aurangzeb.[83] In the month of Rajab his companions were dismissed with a reward of Rs.8,000. The object of this mission was to congratulate Aurangzeb on his ascent to the throne of India.

While the Persian minister was still in India, the Governor of Kabul sent to court news of the arrival of an ambassador from 'Abd al-'Aziz Khan of Bukhara.[84] Khwajah Ahmad was a son of Mahamud,a famous Khwajah of Trans-Oxiana. (It were usually very pious men who were sent on political missions from Turan.) Aurangzeb appointed Musahib Beg as the *mihmandar*. After resting for a few days he presented his credentials on the 4th Rabi 'ath-thani while the *jashn-i-shamsi* was in progress. Sayf Khan and Kabad Khan introduced him into the royal presence in the *Diwan-i-Am*. He submitted the Khan's letter and presents, which included a beautiful ruby valued at Rs.40,000; a robe of honour, a jewelled dagger and Rs.8,000 were bestowed upon him. A grand banquet was given in his honour on the river-bank. At a private interview in the royal bath-house he conveyed the oral messages from the Khan. In all he received Rs. 120,000. He died at Lahore on his return journey.[85]

Mustafa Khan was sent by Aurangzeb to 'Abd al-'Aziz and Subhan Quli. A robe of honour, a horse with golden trappings, a sword with jewelled fittings, a plume and a female elephant were bestowed upon the ambassador-designate. Presents worth Rs. 140,000 for 'Abd al-Aziz and Rs.100,000 for Subhan Quli were sent.[86] In his letter to 'Abd al-'Aziz Khan, Aurangzeb acknowledged the latter's embassy and expressed hopes for the continuation of old friendship. He also justified his acts on religious grounds.[87]

In a longer letter sent by Fadil Khan, Aurangzeb was styled "the king of both the spiritual and temporal worlds, and the true successor of the *Khulafa-i-rashidin.*[88]

In this letter to Subhan Quli, Aurangzeb also justified his harsh treatment of his brother, who, he says, "in spite of my best efforts would not come to the path of sincerity and brotherhood". It also dwelt on Raja Jaswant Singh's part in the War of Succession. A few words about Dara's attempt to escape to the Persian frontier and seek the Qizilbash's help are also given.[89]

While Mustafa was in Turan, Muhammad Sa'id came from 'Abd al-'Aziz with fresh fruits, etc.

Mustafa Khan returned in 1077 A.H., and his services were recognised by Aurangzeb, who raised his *mansab* by 500 horses, and also bestowed on him a robe of honour, a horse and the governorship of Bukhara.[90]

'Abd al-'Aziz Khan sent another ambassador with presents and a letter. He was introduced into the royal presence by Tarbiyyat Khan, who had now been restored to his former rank and position. Rs.35,000, a robe of honour and a jewelled sword were bestowed upon the ambassador.[91]

Subhan Quli, too sent an ambassador, Khushhal Beg, with a letter and presents at that time. Both the ambassadors were dismissed on the 25th Jumada'l-awwal, during the ceremony of weighing. In all Rs.34,000 were given to 'Abd al-'Aziz Khan's ambassador and Rs.18,000 to the members of the latter's suite. A similar sum was bestowed on Khushhal, though the members of his suite got only Rs.4,000; but his son Yar Muhammad got a golden *muhar* of 50 tolas.

In 1080 arrived another ambassador from Balkh with the usual presents and was introduced into the royal presence by Fayd Allah Khan and Mazhar Khan. He was received in the *ghusal-khanah*. A *khil'at* and Rs.10,000 were given to him.[92] He was dismissed in the month of Shawwal with a reward of Rs.25,000, a *khil'at*, a jewelled sword, and an elephant with silver saddle. Rs.10,000 were given to the members of his suite.[93] Next year an ambassador arrived from Bukhara.[94]

In 1080, Taz Khan was sent to Turan with presents worth Rs.200,000 and Rs.120,000 to 'Abd al-Aziz and Subhan Quli, respectively. The ambassador's *mansab* was increased before his departure. Taz Khan returned after six years in 1086 with Mulla Muhammad Tahir, who was dismissed after a time with suitable reward. 'Abd al-'Aziz,too, sent an ambassador[95] with a letter in 1081 A.H.

As there was a great famine and civil war in Turan, no one came from that country till 1091 A.H., when 'Abd al-'Aziz abdicated the throne of Bukhara in favour of his brother Subhan Quli[96] and, like his ancestors, left for the Holy places. Subhan Quli immediately despatched Qalandar Beg to his old friend Aurangzeb with a letter and presents. Two years later, Rahman Quli came from Bukhara: Aurangzeb was at this time sorely harassed by continual disturbances among the Afghans in general and the Ghilzays in particular .[97] He suspected Persian intrigues in those regions to divert his attention from the conquest of their southern allies for which he was making active preparation. He also suspected the Persians of desiring to attack Indian.[98] But his fears were not quite justified, as the Safavi dynasty was now living only on its past reputation, and was in reality too weak to undertake any great enterprise.

In 1096, he sent Wafadar Khan, the grandson of Sa'id Khan to Bukhara with elephants and other valuable presents. At the time of his departure he was given the title of Zabardast Khan; an elephant and Rs.10,000 were bestowed upon him, his *mansab* too was increased by 400 horses.[99] The object of his mission is nowhere given in any Indian histories, but *Tadhkirah-i-Muqim-Khani* says that Aurangzeb wanted to form an alliance with Subhan Quli against the Qizilbashes,[100] and tried to induce the Khan to attack Khurasan and thus compel them to give up their intrigues in Afghanistan and the Deccan. Zabardast Khan was sent at the time of laying siege to Bijapur and, as Aurangzeb was busy in the Deccan, he would have been much embarrassed by a Persian attempt to create a diversion on the North-West Frontier, so he approached the Uzbegs to forestall it by invading Khurasan.[101]

Aurangzeb, like his predecessors, had no intention of participating actively in the quarrels of Central Asia,[102] but he would have welcomed the downfall of the Safavi dynasty and, if possible, the return of Qandahar by means of intrigues, the Central Asiatic States being a very good instrument for the purpose. So long as Persia was strong enough to exercise moral or political pressure, the total annihilation of the Shi'ah States of the Deccan was impossible, but with a crippled Persia their end could not be far off, and the Emperor could then pursue his activities in the South without any fear of being stabbed in the back by their age-long ally in the North-West. It was a cherished hope of Aurangzeb to shatter this anti-Mughal balance of power once for all. Aurangzeb succeeded in accomplishing this task towards the end of his life. The Safavi Empire was tottering, partly as the result of his intrigues and money, and its allies in the South of India disappeared completely. Apparently both the cultural and political influence of the Shi'ahs in India had been broken by the occupation of its two greatest centers, but Aurangzeb hardly realised that this task had drained the life-blood of the Mughal Empire, which was reduced to exhaustion from which it could never recover until the Mutiny blew out the last flickering flame of its life.

In his letter to Subhan Quli, Aurangezeb apologises for delay in sending the embassy, which was partly due to the affairs of Muhammad Sadiq and partly to the rebellion of Rana, a noble of India, who refused to pay *jizyah*, and Akbar's joining the "heretic" rebel. He also speaks of reducing Bijapur, that "nest of Shi'ah intrigues" and of having punished Sambha in the South and the Kalmaks in the North. In the end he expresses a hope that *Khana hzad* Zabardast Khan will succeed in reviving the old allaince and friendship.[103]

Sultan Sulayman II of Turkey approached both Aurangzeb and Subhan Quli for a similar alliance six years later,[104] but Bukhara was too weak and sorely harassed by her two foes, Urganj and Khwarazm, to be an effective ally; besides she was torn by internal strife.

On his return, Zabardast Khan was promoted to the coverted post of governor of Oudh and his *mansab* was further increased.

Shortly before his death, Subhan Quli sent Nazr Beg with a letter and presents.[105] After Subhan Quli death Trans-Oxiana was again plunged into terrible civil war between the factions supporting 'Ubayd Allah and Muqim Khan and no one came from those regions till 1113 A.H., when

'Ubayd Allah sent Qutb ad-Din with presents and a letter. Aurangzeb was too far removed now from Central Asia to take any active interest in the politics of those regions.

In the beginning of his reign so liberal were Aurangzeb's awards to foreign envoys that even the petty States of Central Asia were tempted to send some. In addition to the embassies mentioned above, Aurangzeb received in 1074 A.H.(1664 A.C.) Mir Hijji Fawlad from 'Abd Allah Khan of Kashghar, and sent Khwajah Ishaq in return.[106] He received two more embassies from Kashghar; in 1079 came 'Abd ar-Rashid, and in 1101 'Abd ar-Rahim Beg.[107] In 1667, he also recieved Asham Beg from Urganj with a letter from Muhammad Khan.[108] Two more embassies arrived from Urganj, one in 1671[109] and other in 1681.[110]

'Abd Allah Khan, the deposed ruler of Kashgar, came to India and was suitably provided for.[111]

It is fitting that a few words should be said here about the rapid decline of the Mughal Empire during the last few years of Aurangzeb's reign.

As has been pointed out elsewhere, the terrible reverse in Central Asia had far reaching effects and it changed the economic and political condition of the Empire. It was only natural that in a highly centralised government, as that of the Mughals, the first signs of weakness should have manifested themselves on the North-West Frontier of the Empire. Close at its heels came the disastrous expedition to Qandahar and a War of Succession. Had Aurangzeb after his success realised the importance of a constructive economic policy instead of the wild goose chase in the South, the Mughal Empire would have been given a new lease of life. What was wanted at this juncture was a new mind rather than old dogmas. One wonders why Aurangzeb's long reign did not produce a single minister or governor of outstanding ability. Was it that his active brain was too domineering for the display of the administrative capacity of any minister? Or was there a real dearth of capable men? It is beyond doubt that the greatness of his predecessors was due to their great ministers. Bayram Khan, Abu'l-Fadl, Hakim abu'l-Fath, Todar Mal, Asaf Khan, Sa'd Allah, Ali Mardam, Afdal Khan and other able ministers were as much responsible for building up the Mughal Empire as sagacious sovereigns like Akbar, Jahangir and Shahjahan. It is true that in the beginning of his reign Aurangzeb had eminent advisers like Mir Jumlah, Fadil Khan, Danishmand and others, but they were all men of his father's time, who soon disappeared from the scene. Had there been a mind like that of Abu'l-Fadl to tackle the economic and political problems that arose during the last few years of Shahjahan's reign the history of the Mughal Empire would perhaps have been different. But the guiding hand of Providence had decreed that at this greatest crisis in the life of the Empire the presiding genius, instead of following a constructive economic and political policy, should seek military glory in the South.

Notes & References (Part-I)

1. *Baburnamah* (Trans) I.p.81.

2. *An Empire Builder of the XVI Century*, p.102

3. Muhammad Yusaf b. Khwajah Baqa tells us that in 1061 A.H. when he was accompanying the embassy to India as *waqai-nigar* he noticed all along the route piles of human bones.

4. Sir Stafford Northcote in the House of Commons.

5. *Akbarnamah* II.534.

6. *Akbarnamah* III. 296.

7. Elliot refers to this letter and says it is in Abu'l-Fadl's *Insha*. daftar IV. Mrs Baveridge has rashly assumed that "there is no such daftar". Haider Bilgrami in his *Sawdnih-i-Akbari* (OR 1665) mentions daftar IV, but this daftar is not to be found in the *Insha* as it is. Probably Elliot came across it in some private collection in India.

8. Mirza was notorious hater of the Shi'ahs. He was subsequently put to death for murdering Mulla Ahmad of Tatta, a noted Shi'ah, and one of the authors of *Ta'rikh-i-Alfi*

9. *Akbarnamah* III (text), 157; Trans. 222

10. For Mirza's relations with Humayun see Badauni I (Trans).580.

11. *Akbarnamah* III, 296; text 211

12. Mirza Hakim attacked Punjab in 1581 but retreated. Akbar conquered Kabul but made it over to the sister of Hakim, who subsequently let the Mirza assume the control after Akbar's retreat. There was possibly some sort of understanding between him and 'Abd Allah for there was an exchange of embassies at that time between them. See *'Abdullahnamah.*

13. *'Abdullahnamah*, ff,484b. It is also stated that Mirza Hakim sent Maulana Nur ad-Din to 'Abd Allah and 'Abd Allah sent Mehr 'Ali Kokaltash, in connection with Badakhshan.

14. Badauni II (text). 270. Akbar's letter sent with Khwajah Khatib and Mirza Fawlad is given in *Majma'al-Insha'* (OR 1702).ff.198b.It does not

contain the above couplet.

15. *Al-Masalik wa 'l-Mamalik*, text and translation by M.Barbier de Maynard, *J.Asiatique*, 1865.I have also discussed the question with Prof, Gibb, and he too is of the same opinion. See also Balkhi's remarks in this connection.

16. See *Rawdat as-Safawiyyah* (OR 3388),pp.73-74, for correspondence between Isma'il and Shaybani on the subject of Khurasan. An abstract of the correspondence is given on ff.177a-178b of 'Ali b. Nurah's *History of Isma'il* (OR 3245).

17. Col Malleson says:"...Akbar heard of the death of his brother at Kabul and that the frontier province of Badakhshan had been overrun by the Uzbegs, who also threatened Kabul" (p.131).

18. It was at this time that his brother died and Kabul passed directly under his control(1585 A.D)

19. *Akbarnamah* III,735

20. He was the youngest son of Bayazid, the leader of the Roshaniyyah, see Dr.Lyden's account, *Asiatic Researches* II,363.

21. Col Malleson attributes this to the fear of Uzbeg invasion.

22. *Akbarnamah* III, 735. Commonly known as Birbal and known to English readers through S.Warman's translation of his witty sayings,jokes,etc.

23. Elphinstone says: "It was probably apprehension of further progress of that formidable neighbour (Abd Allah) which chiefly induced him[Akbar] to go in person to Cabul in 1586"(vol. II,283). I think the fort of Attock, too, was erected in fear of Turanian invasion, for it was about this time that its building was undertaken seriously, though the proposal was made a few years earlier when Akbar pursued Mirza Hakim to Kabul.

24. Ff. 199b(OR 1702).'Abd Allah justifies his occupation of Badakhshan and says that "Shah-Rukh attacked his country when he was busy fighting in the Dasht-i-Qipchaq".

25. Whenever there was a movement of Mughal troops in Afghanistan or if the Emperor came to Kabul, the rulers of Trans-Oxiana were alarmed. Imam Quli strongly protested when Shahjahan came to Kabul in 1629. See *Tadhkirah-i-Muqim Khani*. ff.98.

26. This letter, the author of *Majma al-Insha* tells us, was drafted by Hakim

Abu'l-Fath, but the compiler of Abu'l-Fadl's letters, thinking it to be one ofhis composition, included it in *Mukatabat-i-'Alami(cf.Majma'*,ff.202).

27. For the reception of Hakim Hammam in Turan, see*'Abdullahnamah* II,ff.485,where it is stated that a cordial reception was accorded to him; full details of negotiations are also given.

28. This letter was sent with Muhammad Quli shortly after the conquest of Khurasan. The letter is reproduced in *Tadhkirah-i-Muqim Khani*, ff,55.

29. No better example ofhistory repeating itself is to be found, if this alliance is compared with the broad principles of the Anglo-Russian Agreement of 1907. Akbar, though he entered into an alliance with the Uzbegs, was at the same time, like England, vitally interested in the preservation of Persia as an independent state.

30. *Akbarnamah* III,p.871. Sayyid Muhammad Sadiq 'Ali in his commentary of the Nawal Kishore edition of *Akbarnamah* says:"Akbar had the envoy drowned because the letter asked for Akbar's daughter in the marriage," It is difficult to guess the source ofhis information, for no contemporary history makes this allegation. The Iqbalnamah only says that 'Abd al Mu'min's letter contained improper things. Some historians regard it as an act of insolence on his part to have sent an embassy but such embassies were quit common in those days. Akbar himself received two embassies from heirs-apparent during their fathers'life-time before this incident. It is, however,interesting to speculate whether such envoy's person too was covered by the diplomatic immunity so greatly observed in the East in those days. Another interesting point raised by this embassy was the question of refugees being extraditable. ADD 27257 gives an extract from Akbar's letter to 'Abd Allah where Akbar says that his Court is the "Asylum of the World" and that he "could not surrender any one who took shelter there".

31. *Akbarnamah* III, 881.

32. Badauni (II, 387) tells us that there was a great epidemic in Lahore at that time.

33. *Akbarnamah* III, 1050-52.

34. The reply is given on p.4 of *Makatubat-i-Alami* and is also reproduced in Akbarnamah. Von Noer refers to 'Abd Allah's letter, but he does not seem aware of the political alliance. See Mrs Beveridge's *life of Akbar* II.227.

35. As 'Abd Allah's letter is nowhere forthcoming it is difficult to speculate

exactly what these expeditions were, unless one accepts Imam Quli's version. Probably 'Abd Allah contemplated conquering the whole of northern Persia, right up to the Turkish frontier, thus "clearing the way to the holy places". That Akbar was against the total extinction of the Safavi dynasty is abundantly clear from his attitude all through the negotiations with 'Abd Allah.

36. He was a son of Fakhr an-Nisa Begam, half-sister of Akbar.

37. *Akbarnamah III*, 1247.

38. See *Tuzk* (trans) 1,26, where he expresses a hope of one day acquiring these regions.

39. *Lahori* I,218, wrongly states that she was married to Yar Muhammad. See also Howorth II Div.II,744 and 874. Sykes refers to this in a most confusing manner. He states that Jan was offered the throne of Bukhara after the murder of Iskandar Khan. Iskandar died after a long reign and was succeeded by his son 'Abd Allah Khan, the greatest of the Shybanis, who in his turn was succeeded by his son 'Abd al-Mu'min. It was after 'Abd al-Mu'min's death that the throne was offered to Jan. Sykes does not seem to be aware of the existence of 'Abd al-Mu'min and 'Abd Allah (cf. Sykes, ed.1930,II210).

40. *Tadhkirah-i-Muqim Khani*, ff. 63.

41. For Din Muhammad's death see *Bahr al-Asrar*, ff.55.

42. See *Ma'athir-i-Jahangiri*, ff.53.and ff.96 (I.O.L.575).

43. *Tuzk* II,209.

44. It has been explained in Jahangir's relations with Persia that Trans-Oxiana too was at this time threatened with a Persian invasion due to the complications following the Uzbeg attack on the fort of Marghab a few years earlier. See *'Alam Ara-i-Abbasi.*

45. It was about this time that Pietro delle Valle wrote: "......his whole Empire is governed at this day by her." This opinion is supported by Kamgar Husayn, who says: "At this time her power and influence exceeded even the bounds of imagination and possibility."

46. Cf. *Tadhkirah-i-Muqim Khani*, ff.92.

47. *Ma'athir-i-Jahangiri*. ff. 143b.

48. This was an allusion to Jahangir's project to conquer Trans-Oxiana (cf.*Tadhkirah*, ff.96).

49. *Ma'athir-i-jahangiri* ff.207.

50. 'Abd ar-Rahim was the chief ambassador and his brother Hasan was his assistant. They were descendants of Imam Ja'far as-Sadiq and sons of the Murshid of 'Abd Allah Khan who was the head of the Naqshbandis.

51. He was the governor of Mashhad under 'Abd al-Mu'min, but after his death came to India.

52. P. 612.

53. Lahori tells us (I,193) that "whenever he had an audience with the King, he was ordered to sit near the throne and thus became more distinguished than the greatest nobles."

54. *Ma'athir-i-Jahangiri*, ff. 207.

55. A portion of this letter has already been quoted.

56. Qazvini, ff. 150; Lahori I, 193.

57. *Cf. Lahori* I. 215-16; *Qazvini*, ff. 150-51

Notes & Reference (Part II& III)

58. See *Bahr al-Asrar*, f.200.

59. Lahori I 206.

60. *Bahr al-Asrar*, however mentions it on ff. 202, 203.

61. The letter is given by Qazvini, f.150. For this embassy see Lahori I 318.

62. Qazvini,f.265; Lahori I. 465-72.

63. Lahori I, part II, 104.

64. *Tadhkirah-i-Muqim Khani*,f. 97.

65. *Ibid.*, f.98.

66. *Tadhkirah* (f,99) says that Shahjahan went back to India and Imam Quli, after staying at Balkh for a while, returned to Bukhara. A long description of Imam Quli's reception at Balkh is also given.

67. Lahori II, 152-55.

68. This is supported by Russian historians who say"......mais Schah-Djehan qui pendant son sejour dans cette ville (Kabul) avait vu de pres les difficultes de cette expedition, y avait deja renonce: il repondit a I 'ambassodeur qu'il n'avait jamais songe a la guerre, qu'il n'etait venu que pour inspector ses provinces et qu'il allait bientot retourner aux Indes." *Supplement a L'Histoire General des Huns. des Turcs et des Mongols*, St. Petersbourg, 1824, p.42.

69. Lahori II,192.

70. The *Tadhkirah* tells us that he was present in the great mosque of Bukhara when the *khutbah* was for the first time read in Nazr's name (31st October,1641) and witnessed the great lamentation of his people.

71. Lahori II,456.

72. *Khuld-i-Barin*, ff.183; Tahir Wahid.ff,566; *Qisas-i-Khaqani*, ff.52b.

73. Lahori II,p.530-532.

74. A complete account of this campaign is given by Mohammad Salih Kambuh (OR 1683).It has been the chief source of my information for the following pages.

75. The historian of Central Asia describes in rather exaggerated tones his reception at Isfahan. Muhammad Yusuf and Muhammad b. Amir Wali tell us that the Shah went out several miles disguised as a soldier and walked with the Khan's horse unrecognized for a considerable distance. Nazr Muhammad on being quietly informed about the identity of his attendant, jumped down and embraced the Shah. This particular incident is not mentioned by Persian historians, but they are all agreed that the Shah went out of the city several leagues to receive the Khan and that the whole city was gaily decorated in his honour.

76. See Tahir Wahid, f. 53b.

77. Lahori II. 572-77.

78. Nazr Muhammad excused himself and sent his sons to bid farewell to the

prince.

79. This is supported by the Russian historians who say: "Les armees du Djeghatay repasserent, donc la Koutel ou les soldats furent exposes a des gelees si violentes qu'ils perirent presque tous de faim et de froid, apres avoir brule jusqu'a leurs armes pour se chauffer." *Histoire General des Huns, des Turcset des Mongols*, p.46.

80. See Edwardes's *Mughal Rule in India*, p.121, footnotes.

81. The trade through the Bolan Pass was very considerable. See Sarkar's *Mughal Administration*. p.67.

82. *'Alamgirnamah*, pp.605-8.

83. See Bernier, pp.116-23; *Storia* II, 34-44.

84. *Ma'athir-i-Alamgiri*, p. 37.

85. See *'Alamgirnamah*, pp.673.644,662-465,673,738.

86. *Ibid.*,p.863: *Ma'athir*. p. 48.

87. For the text of th letter see *Bahar-i-Sukhan*, f.24b.

88. *Ibid.*, ff.29-34b.

89. *Ibid.*, f.28b.

90. *'Alamgirnamah*, pp. 1035-49.

91. *Ibid.*, p.1049.

92. *Ma'athir*, p.20.

93. *Ibid.*, p.90.

94. *Ibid.*, p.104.

95. *Ibid.*, p.158.

96. *Ibid.*, p.216.

97. *Ibid.*, pp.145-46. Cf. Ishwardas 71a, for disturbance in Afghanistan.

98. *Storia* II, 322.

99. Ma'athir, p. 255.

100. This is supported by the analysis of the Russian historians who say: "L'objet de cette ambassade etait d'engager le monarque Uzbek a combattre avec lui les Persans. ennemis de la religion et les lours en particulier."

101. But Persia was too weak to take such action. Aurangezeb was deceived by the outward calm in Persia, the splendour of the court and their intrigues in Afghanistan.

102. Strangely enough Gribble (*History of the Deccan I*) says: "It is alleged documents exist which show that Aurangzeb's secret intention was ultimately to found a great Emp.ire in Central Asia." Probably he was thinking of Shahjahan.

103. The text of the letter is given in *Tadhkirah-i-Muqim-Khani*.

104. For his letter to Aurangzeb. f.18a; and Subhan Quli, f.19a, Brit. Mus. MS OR 7875.

105. *Ma'athir*, p.237.

106. 'Alamgirnamah, pp. 858 and 861.

107. *Ma'athir*, p.79.

108. *'Alamgirnamah*, p. 1048.

109. *Ma'athir*, p.112.

110. *Ibid.*, p.207.

111. *'Alamgirnamah*, p. 1064; *Ma'athir*, p.71: *Storia* II. 190.

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AL-RAZI'S CONCEPT OF MATTER

Gulshan Majeed

There are two orders of Reality; the physical order of our experience which includes all the appearances that could be felt by any of our five senses and the Psychical order of our experience. To call the physical order of our experience the Appearances does in no way deprive it of its necessary reality though many metaphysical systems do try to make us believe in itsillusory nature. Reality is the systematic whole manifested through appearances "while yet no part is the whole[1].

Abu Bakr Mohammad Zakariya al-Razi[2] does not believe in the existence of more or less two Independent Worlds of Realties. He sees the World of Appearance as an extention of the whole reality. Thus one single reality is understood under different degrees. One basic unit which governs the relation between substance and its qualities is the matter i.e. the qualities and the relations reside in the matter and it is the different arrangement of the constituents of the matter which gives rise to various properties as encountered by our senses.

Al-Razi believed in the supremacy of reason and accepted its authenticity to comprehend the world around him. He believed that sense perception, observation and experiment under the governorship of reason impart true knowledge about the nature of objects under study. Al-Razi rejected intuition and revelation as the case of invalid knowledge.[4] We should refer to it (i.e. reason) in everything and judge all matters by it; we should do as it commands us to do'.[5] And reason commanded him to dispense with the notion of creation *ex-mundi nihilo*[6] as it involved a process *au contrare* to human observation and experience. World is created, nay composed of four classical elements,[7] earth, water, air and fire. These are not according to al-Razi, the real elements and the absolute basis of the world but , unlike the early Greek concept where the elements are simply the great aggregates, these four elements have a natureof their own[8]. They are formed by a definite proportion of matter. Al-Razi's concept of matter includes,

(a) The Form[9]
(b) The principle of intelligence[10]
(c) The living principle[11]
(d) The interstitial void[12]

Matter is inexhaustible and indestructible. It is the source of the infinite multiformity of things. Its manifestations are endlessly varied. Matter is the very materiality of this world. But in the process of the creation of the world it is not the only element involved. Matter is one of the ultimate eternals which go in the formation of this world.[13]

Matter is the third eternal principle in the cosmology of al-Razi. He calls it, *Hayula-i-awali*[14], that is the first matter. The other eternals are:

Bari, (God, demiurge); *Nafs-i-kulli*, (the universal soul); *Makan-i-mutlaq*, (the absolute space;) *Zaman-i-mutlaq*, (the absolute time).[15]

All these five eternal principles are co-existent. In their pure state they are independent of each other. It is through the matter alone that they are involved in an activity. The whole purpose of this activity seems to be the enjoyment of matter by the soul,[16] as al-Razi tells us that the soul desired to enjoy matter and *Bari* provided the appropriate conditions for the fulfilment of this desire.[17] The ideas of al-Razi are closer to the Indian philosophical system of Sankhya[18] where the union of eternal *purusha* and equally eternal *prakrti* has the sole purpose of enjoyment behind it

Matter has its limitation. It does not accept the form. It is adopted by the form. `Acceptance' would mean that matter has a choice and faculty of intellection on the basis of which it makes a choice. The form "binds" the matter and makes it to confirm to different standards of measurement, physical and aesthetic both. Without the form it is unbounded and unmanifested. It needs to be persuaded (or aroused) to make its choice.

Matter is not the imperfection as was thought by Plotinus and his muslim followers. It is the necessary ingradient of the physical world. It is through it that soul realizes itself and tastes the `pleasure'.

Matter as given to our senses is in constant motion; in this state it is known to Planks as `energy'. Motion becomes sensible when energy changes space with respect to time.

The matter in space time continuum forms the world of appearance where the things exist in relation to each other.

Matter is non-living and passive[19]; living in it is the soul. But soul in itself is inactive.[20] It needs an active principle to make the union of non-living matter and inactive soul a possibility. This active principle is the *Bari*. Eternal, omniscient and immutable *Bari* is all knowing conscious executive *par excellence*. Whether *Bari* is giver of the *Sura* (forms) is not clear from the fragments edited by Paul Kraus in 1939.[21] Nasir-i-Khusraw however believes that *Bari* did provide the *Sura*.[22] In a fixed state, as a particular individual thing, matter and form are inseparable but in the free state matter exists independent of form, in a dispersed condition. As compared to matter, form has no independent existence. Form is in the art of arousing matter. It is in the very divine act of "Creation". Subjection of matter to form has two distinct advantages; It sets the matter in motion and makes the entry of the soul smooth and easy. Thus according to al-Razi, the formed matter is not only corporeal but spiritual also i.e., it has two well defined poles, the physical and the psychical (restating the age old body mind relation). The living thing is the soul which is active and the obeying, "yielding thing" to be acted upon"[23] is the matter. The trio comprising *Bari*, *Nafs-i-Kulli* and *hayula* may be compared to *nomos, psuche and archi* of Anaxigoras. *Bari* is the principle of intelligence and also reason and the being who created and imparted the reason to his creation from the essence of his divinity.

Bari, like Anaxigorean *nomos* (mind) is *apeiroi* (unlimited) and *autokrates* (independent) and has been mixed with nothing and alone is itself by itself[25]. Though al-Razi's *Bari* is a deliberate creator, yet *Bari* does not possess the command and control over the happenings in the world once it is created out of the eternal matter. Further line of argument is Aristotelian.[26] He seems to say with Aristotle that his (God's) existence is enough to keep in motion the whole world-order by activating the universe[27] and a natural impulse towards form. The concept of creation in al-Razi's philosophy is unique in many ways:

(a) Creation is the process of informing[28] (or activating the primary matter or *Hayula-i-awali)* by the *Bari*.
(b) It is the acceptance of soul by the *Hayula-i-Awali*
(c) It is the union or composition of the *'Juz la yata-jazza*[29] (atoms) in a definite proportion.

And once the soul and matter are united, the development and transformation undergone (in the world), is the progressive composition of Elements (*unsur*) accompanied with a change in their qualities. Al-Razi recognizes, as can be gleaned from whatsoever meagre refrences we have, the following forms of change.[30]

1) Change of place of bodies in space. This kind of change is measured by the *Zaman-i-mahsur* (the finite time) This change is relative in nature. The space in which this change occurs is the very essence of the matter.[31]

2) Formation and break-up, composition and separation of the particles of matter or in other words the coming into and passing away of being. Composition and separation is a perpetual process continuously going on.

3) Changes taking place at biological level. Al-Razi, infact, rejects the notion of creation *ex-mundi nihillo* on the basis of his (biological) observations. Bodies come into being, as one observes, not from nothing but from a material cause.[32] Growth and decay is a continuous development and not a mutation or a jump.

As for the origin of motion al-Razi tells us nothing except that life flows from soul[33] (i.e. soul is the principle of life in the otherwise dead matter) and that there are two kinds of motion depending upon the constitution of the atoms comprising the elements and the sphere. The compostion of a particular element determines the nature and direction of its motion. Proof of this is furnished, according to al-Razi by the movement of the sphere which is, contrary to other elements directed to the periphery of the world[34]. There is no free motion in space. Motion is the activity of matter and soul. Thus al-Razi like the Greek atomicists before him, speaks of two phases of motion[35] but he does not accept the belief of the latter that there was a period in which atoms roamed freely. The two phases of motion are: The initial or principle motion - which is the very essence of the union of soul and matter and the resultant motion[36] He believes with Democritus and Leuccipus in generation and destruction by association and dissociation and alteration by order and position.

One of the theories put forward by Heisenberg states that the particles comprising matter when collide with each other with a very high velocity create new elementary particles. These particels are basically nothing but different stationary states of one and the same stuff.

Matter in primordial state is in a dispersed condition. Its primary mood is rest and hence formlessness. At this particular state it is known as *Hayula-i-awali or Hayul-i-mutlaq*. This concept of Hayula-i-awali was a need based one. Reason, observation and experience did not permit al-Razi to believe that anything could come into being from what is not and that `what is' could pass into nothingness. So to establish primacy of substance, its stability and eternity he laid down the concept of *Hayula-i-awali*. It does not mean that *Hayula-i-awali* is simply a spiritual or mental category. It is a philosophical category, knowable through reason. It has an independent existence.[37] It is composed of *'juz'la yatajazza*[38] (atoms), scattered throughout the space which is also eternal. Atoms are *causa sui*.[39] Atoms are substantial reality of the world. It does not presuppose any reason or condition for its existance. Al Razi's Matter has following characteristics:

a) It is philosophical category[40]
b) It is unconscious, immutable and lifeless.[41]

c) Earth, Water, Air and Fire are its relative modes of existence, Its stable mode of existance is its dispersed condition. Nasir-i-Khusraw tells us that along with the sublunary world matter too, will be liberated from its enslavement to form, as it was in pre-eternity,[42]

d) It is, basically, recalcitrant[43] to form.

e) It is essentially substantive.

In order to establish the enternity of matter, al-Razi offers two proofs. The first proof runs thus. The act of preparing matter to recieve the soul (from) needs not only the *Bari* who acts but also the matter which recieves that act. As the agent who acts is eternal and immutable before the act, so what recieves this act must also be eternal before it has received that act.

The second proof he states thus. Our observation teaches us that things do not come from nothingness but grow, and develop. They come into existence by composition. *God prefers this very mode of creation au contraire* to what religions teach us. It would have been easier for him to create *ex-nihilo* but he does not. He creates using matter and so matter is eternal.[45]

The changes which occur in the matter occur at the macro level; atoms otherwise neither suffer nor change. They are solid and compact. Unlike Aristotle who rejected the possibility of void as he held the space to be finite and inseparable from body, al Razi believed in the positive existance of the void.[46] Introduction of void was based on the general misconception that bodies need a void to move into. It was Milissus who, first of all connected motion with the void[47]. There is interstitial void. Void outside the bodies and void between the bodies (atoms). This interstitial void or the nature of vacuity explains the nature of the quality of substance. Formed matter consists of atoms and void. Heaviness and levity, opaqueness and transparency depends upon the density of atoms.[48] Magnitude of the void between the atoms accounts for the hardness, shape and softness of the matter.[49] Atoms constitute elements and the sphere. Sphere need not be confused with the Parmenedian or Empedoclean *sphairos*.[50] Their *sphairos* is homogeneous and motionless and it generates the natural world.[51] The four elements are earth, water, air and fire. Earth is more compact and solidified and its atoms contain less void.[52] Atoms of water are comparatively more rarefired and have a little more void in between. Atoms of air and fire are highly scattered and rarefied.[53] They contain more and more void. The movement of these four elements is directed towards the centre of the world.[54] According to earlier thinkers matter exhibited itself through four forms instead of the three i.e., solid, gas and liquid; they understood the fire, which is a form of energy, as one of its forms thus making them total four.

This concept of the material foundations of the world and the atomicity is unique in the whole history of the Islamic philosophy. Its more distinguished features being:

1. Eternity and substantiality of matter.
2. Motion as the essential and inherent mode of Matter (bodies)
3. Space (particular) and time as the very essence of the matter.
4. Mind and body relation. Soul/divine reason as the principle of life/ consciousness.
5. Conservation of Mass or indestructibility of matter.
6. Acceptance of the divisibility of the elements (*unsur/yie*) into very small *juz la yatajazza* and the belief that the properties of the elements depend upon the magnitude and the extent of the void in between the atoms.
7. Matter is not the basis of the world in the sense of the first principle of metaphysics.

Al-Razi's views are essentially materialistic but to call it a kind of materialism is not correct.

Notes and References

1. Al-Razi, is a (mostly maligned, ignored and misunderstood) philosopher and a physician of repute. His medical compendium *al-Hawi*, translated into Italian in 1279 A.D. and in Prusian in 1486 A.D. was taught as a text book in the schools for medecine in Europe. He used bothe Greek and Indian authorities on medicine. O Leary pays respects to him as "father of Arabic medecine proper" see O. *Leary Arabic Thougth* p, 111, 112; Ibn Khulkan vol II. p. 78. *Tabakat-ul-Utba*, vol, I. p. 309. List of his extant philosophical works includes *al-Tibb al Ruhani* (in the British museum and library at Cairo); *al-sirt al-Falsafiyah* (British Musuem).

   His other works are :
   Kitab al-Lidhah;
   Kitab ilm al-ilahi.

2. In the recent times Mahmud Najmabadi has painstakingly tried to establish his date of brith and death in his monograh on *the life and works of al-Razi.* I have prefered the date given by Abu-Raihan al-Biruni;

3. Abdul-Rahman Badawi, Mohd-Zakarya al-Razi, *A History of Muslim Philosophy* ed. M.M.Sharif. Lahore, 1964 p. 439-440; Razi's *al-Hawi* opens with discussion on the Reason and its importance in the practical life. Razi writes, "By Reason we apprehend all that elevates us and beautifies and enriches our life ....' See A.J.Arbery. *Spiritual physik of Rhazes* p. 20 W.M.Watts, *Muslim intellectual* p. 35.

4. A.J. Arbery, Ibid.

5. Dr. Z.U. Safa, History of *rational Science in Islamic* Civilization in his Tarikh adbiyati Iran - I; See also Majid Fakhry *History of Islamic Philosophy* 1981. London, p. 105 Syed Andulasi, *Tabaqat al-Umum Bairut*, 1912, p. 33 and 63 has this to say, "(Razi) liked and accepted the arguments of Brahmans and those of Sabians on the prophethood, which he rejected and transmigraion of soul which he accepted".

6. A. Badawi, op cit 440.

7. And he began the creation of man from clay: Quran xxxii 7, vi 2, xxi 30, xxxvii, A.R. Badawi, ibid 444.

8. Nasiri Khusraw, *Zaid al-Mussafarin*, Berlin 1340, p. 98.

9. Al-Razi rejected the Aristotelian unity of form and matter which are

united in the individual things only. It is because of this that his concept of *Hayula-i-Awali* looks more metaphysical first principle than a substantial Reality.

10. Majid Fakhry, *History of Islamic Philosophy*, London 1981, p. 105.

11. Nasir-i-Khushraw, opcit p. 98. "Life flows from the soul."

12. Paul Kraus, al-Razi, in the *first Encyclopaedia of Islam* (1913-1936) Ed. by M. Th. Hautaman vol V. G. J. Brill, 1978 New York, p. 1135.

13. Nasir Khusraw, *Zaid-al-Musafirin*, p. 98.

14. Ibid, p, 73

15. E.F. Paters, *Aristotle and the Arabs* New Yark 1908 p. 170-74 "These are put forward in the physical works pieced together by Paul Kraus particularly in *Ilam-i-Ilahi*, opcit p. 195-226 cf Marzuki, *al-Azminahwal Amkinah* vol I p. 144.

16. Paul Kraus, al-Razi, opcit p. 1135.

17. Sr. Radha Krishnan *Indian Philosophy*. Vol I, 1985, P 259, 60

18. A. R. Badawi opcit, p. 439; Kant writes. "The possibility of living matter cannot even be thaught, Its concept involves a conradiction because lifelessness, inertia constitute the essentail character of matter," *Critic of Judgement*, tr. J. H. Bermard London 1892 p. 304.

19. Paul Kraus opcit p. 1135; A.R. Badawi, opcit.

20. Majid Fakhry, opcit p. 105.

21. Paul Kraus, opcit writes, "the soul, the second enternal Principle, possessing life but not knowing, is seized with the desire to unite with the matter and to produce within itself forms susceptible of procuring corporeal enjoyment".

22. Paul Kraus, ibid.

23. Fakhry opcit, p. 102.

24. Like the *archi* of Anaxigoras the *Hayula-i-awli* of Razi is "unlimited and infinite set of minimal particles or atoms' Razi believes in" *Nomou Panta Chremata* cf Barnes, *The Presocratic Philosophers* 1979. p. 103.

25. Paul Kraus, opcit.

26. Though all the five eternals are independent, only Bari keeps himself clean and out of the reach of matter, space, time and soul get involved with the act of matter in the formation of the world.

27. Razi's Bari is likewise an immovable mover. World for him, is the gradual unfolding of the matter.

28. Paul Kraus, opcit, 102 E.E. Peters, opcit, "Fretz, pointed out that early Islamic atomism appears as given by the system like the atoms themselves. It had an existence independent of theology to which it lead.

29. Majid Fakhry opcit 102 "Creation is the act of inform matter".

30. Atoms are themselves immutable. Matter is spoken of as recalcitrant to form and change.

31. Majid Fakhry, opcit.

32. Paul Kraus, opcit.

33. i.e. Soul is the principle of life and change.

34. A.R.Bidawi, opcit, 444.

35. Ibid

36. Act and the accident, Act is the initial impetus given by the Bari Himself.

37. Paul Kraus, opcit, p. opcit.

38. Paul Kraus, ibid.

39. Ibid.

40. Ibid.

41. Though the atoms are scattered without form i,e. they have no sensible properties, but they could still be known by reason or rational thought.

42. Paul Krasu, opcit.

43. Nasir Khusraw, opcit p. 74

44. A.R.Bidawi, opcit.

45. Majid Fakhry, opcit p. 105, Badawi, ibid p. 444

46. Ibid p, 102

47. Ibid

48. Ibid, it were atomists who distinguished body and space. The unlimited basic stuff of Anaximenes and Anaximander.

49. Burnet, opcit.

50. Badawi, opcit, 447.

51. Majid Fakhry opcit 105, Galen says, "Things are thought (*nomizetai*) by men to be white and black and sweet and bitter."

52. The conception of natural world as composed of earth, water, air and fire does not belong to Milesians only; Zoroastians, Jains, Sankhya and Buddhists also believed in it.

53. Atoms in solids are compact, in liquids loose and in gases rarefied Badawi opcit p. 447.

54. Paul Kraus opcit.

THE PLACE OF POLITICS IN THE PHILOSOPHY OF AL-FARABI

Erwin I.J.Rosenthal

In isolating al-Farabi's political thought we must bear in mind that it is only a part of a whole philosophy derived from Plato and Aristotle and evolved by a Muslim. The result is a blend of Greek-hellenistic thought with Islamic tenets in an attempt to accomodate one with the other. How closely politics is linked with philosophy as a whole, in particular with metaphysics, ethics and psychology, is clear from the structure of the three more important of al-Farabi's political treatises upon which this study is based: *al-Madinat al-Fadila, al-Siyasat al-Madaniya and Tahsilul-Sa'ada.*[4] The title of the first of these treatises is indicative of this dependence of politics on philosophy as a whole; it is in full: *risala fi Ara'i ahli-l-Madinati-l-Fadilati*, and it begins with a lengthy disquisition on the One God, includes a cosmology and covers the whole range of the theoretical, philosophical disciplines. Of its 34 chapters only the last are political in subject-matter. the first half of the Siyasa contains al-Farabi's theory of the soul and the intellect, and of the heavenly substances, while the second half deals with man and his perfection in the State. Both treatises are based on Plato's *Republic and Timaios* and on Aristotle's *Nicomachean Ethics*; the structure and sequence of their political parts take Plato's discussion of the ideal and of the imperfect States as a pattern. The *Tahsil* is the most important, independent and mature of the three, and deserves the designation 'political' in the theoretical sense more so than the other two. It begins with a statement on the twofold happiness of man in this and in the other world, which can only be attained if man lives in political organisation in a nation or city-state. It describes the way of life of man seeking perfection, and defines happiness at the highest good sought after for its own sake,[5] and Political Science as concerned with the means by which men, living in political association in States, attain their happiness according to their nature disposition.[6] Both definitions and their underlying philosophy are taken over from Aristotle.[7] This is why al-Farabi is so much concerned with the nature and destiny of man in relation of God and the universe, and the large space he assigns to psychology and epistemology in his political treatises. So we understand why he examines in the *Tahsil* certain knowledge (*haqq yaqini*) as opposed to opinion (*zann*) and pursuasion (*iqna*), emphasizes instruction (*ta'lim*) and education (*ta'dib*), and concentrates rather on epistemology than on psychology in describing human existence and the end of man. this end is happiness. Happiness is highest perfection, that is, intellectual perfection on the foundation of moral perfection. His dependence on Plato[8] and Aristotle[9] in the realm of political philosphy is, indeed very strong, but it is by no means confined to it, as his treatise *The Book of Agreement between the ideas of the two philosophers, the divine Plato and Aristotle* clearly shows. For it is not only an attempt to establish harmony between their views but also between philosophy and revelation. The aim of the study of philosophy is the perception of the Creator, and the philosophy must strive to imitate (or, to resemble) God.[10] This is ultimate happiness, and Al-Farabi's principal concern in his political philosophy is based upon Plato in the first place.

We must, therefore not expect to find a theory of government as such, a concern with power and its end. If al-Farabi describes the various constitutions of the perfect and imperfect States he does so in relation to man's ultimate perfection and happiness, and because he found them discussed in Plato's *Republic* and Aristotle's *Nicomachean Ethics*. But as a Muslim he believes in Reward and Punishment and in a Hereafter, and knows that Happiness is twofold, in this and in the next life. This happiness is guaranteed by the *Shari'a* alone. Some of its assertions, like the Creation out of nothing, Divine Providence extending to the particulars, the Creator's domination over the whole world, would have caused confusion among men but for the philosophy of Plato and Aristotle which brought certain proofs for the truth and correctness of the divine laws.

These two philosophers have shown the way to faith. Starting from physics we proceed to demonstrative, political and religio-legal questions. Men of insight and intelligence deal with demonstrative questions, men of judgment with political, and men of spiritual inspirations (*ilhamat ruhaniya*) with the religious.[11] Al-Farabi states clearly the difference in method between the philosopher who uses demonstrative arguments and the religious teacher who relies on revelation and inspiration. This distinction has been employed by all subseqent *Falasifa*.

This brief account of al-Farabi's general attitude as a Muslim disciple of Plato and Aristotle may serve as background for a more detailed description of his political thought, in so far as it can be extracted from the three treatises in question.

Al-Farabi starts from the necessity of political association. Man cannot provide himself with the necessities of life or with everything needed for the attainment of his perfection, without the help of many others of his kind who singly supply every one of his many needs. Therefore man's perfection can only be realized in association with others in communities, which are either perfect or imperfect. The former are three, of large, medium and small size. The large association comprises *ma'mura*, the whole inhabited earth; the middle-sized one nation in a part of the civilized world, and the small the people of a city in a part of the territory of a nation. Any community smaller than a city is not a perfect State. It is to be noted that the need for political association described in similar terms in both the *Madina Fadila* and the *Siyasa*[12] is stated more concisely in the *Tahsil*. Here al-Farabi simply states that it is man's natural disposition to be in need of others, and that he must join with others in political association . Therefore he is called *hayawan insi or hayawan madani* Aristotle's *zoon politikon*, —and the science by which man inquires into the actions and habits necessary to attain perfection is, thus, *the human or political science*.[13]

This is derived from Plato and Aristotle, of course. Plato's view that one person should have no more than one occupation is echoed in al-Farabi's emphasis on the need of many persons who must co-operate mutually to satisfy their many requirements. Further, al-Farabi's division of perfect States according to size is also influenced by Greek political thought. *Madina* (city) as the smallest political unit in which man can reach perfection is Plato's *polis*. The large association comprising the whole civilized world may well be due to al-Farabi's Islamic background[14] and is undoubtedly in agreement with the universalism of Islam as a way of life and with the claim of the Islamic empire. But I am inclined to attribute it rather to a blend of this Islamic concept with that of the *Oikoumene* of Hellenism. 'Perfect' on account of size must not be confused with 'perfect' on account of quality. This is clear from al-Farabi's definition of the Ideal State as one whose citizens help each other to obtain those things by which true happiness is reached.[15] Al-Farabi conceives of true happines as a state of the soul in which it exists free from matter and tends towards pure substances free from corporeality.[16] Political Science shows man the way in a gradual ascent from a perception of the physical world and its Intelligibles to that of the spiritual world with the help of metaphysics in search of the principles of Existing Things, that is of Reality. It teaches man to distinguish what is good for the purpose of his end, from what is evil, to seek good and to shun Evil. Ethical virtues must be joined by intellectual virtues and practical arts in order to prepare man for the acquisition of speculative virtues through the speculative science, which alone enable him to perceive Reality, and thus to reach highest perfection and ultimate happiness.[17] Man lives in the State in which alone he can reach happiness; therefore these virtues and arts are political or civic. What applies to man also applies to 'cities' and nations. Virtues and arts can be acquired in two ways: by teaching and education. The former is carried out by words alone and leads to speculative virtues while in the latter are used words and deeds and eithical virtues and practical arts are produced.[18] Aristotle distinguishes between rulers and ruled, or masters and servants, and between master arts (like Political Science which had already been termed a "royal art" by Plato[19]) and subordinate arts. Al-Farabi adopts this same distinction and illustrates it by an analogy between the State and the human body. There is a hierarchy in the body from the head, that is, the heart, down to the lowest and smallest of the member whose degree is determined by their nearness or remoteness from the heart. Those members nearest to the heart rule and are ruled, those furthest removed from the head only serve, but all alike are united in serving the purpose of the heart. It is the same with the State, and when all parts of the State serve the purpose and end of the 'head' of ruler we have the *Madina Fadila*, the Ideal State. But while the members of the body are naturally disposed to their functions, men in the State are guided by will and choice. Leadership or rule is possible on two conditions only: fitness by natural disposition, and voilitional quality and habit. As for the arts, some are both ruling and serving, others only subordinate, but the highest art is solely ruling. It is the art of government, exercised by the ruler exclusively, whom nobody must dominate.[20]

This ruler is called by al-Farabi in the *Madinat al-Fadila* and in the *Siyasa al-ra'is al-awwal*, the first ruler, who is, in the *Tahsil*, identified with philosopher, king, lawgiver and *Imam*. In the two first-named treatises the first ruler is by nature disposed to receive a revelation. This is described more briefly in the *Siyasa* as contact of the soul with the Active Intellect by mediation of two intermediaries, the passive and the acquired intellects, al-Farabi explicitly refers to the *Kitab al-nafs*, presumably in the form Alexander of Aphrodisias commented on and transformed Aristotle's *De Anima*. He says that this man is understood as 'an angel (*malak*) in reality' by the ancient philosophers.[21] The emanation is in the form of a revelation enabling its recipient to define things and direct actions towards happiness.[22] The political significance is more evident still in the *Madinat al-Fadila* where al-Farabi differentiates between the first ruler's imagination and intellect. God mediates to his theoretical and practical reason a revelation which makes him a philosopher, and then to his imaginative faculty, making him a prophet, a warner, capable of directing men to their happiness. This man has reached the most perfect stage of humanity and the highest degree of happiness: 'He is the *Imam*, the first ruler over the Ideal City-State, the ruler over the Ideal Nation and over the whole inhabited earth.'[23] Those ruled by him are "the excellent, best and happy citizens."[24]

Before we discuss the qualifications required of the first ruler as set out in the *Madinat Fadila* immediately after the above passage, we must turn to the *Tahsil* for a fuller definition of the ruler and his functions in connection with the fourfold perfection necessary for the attainment of happiness.

Imam and king must study the speculative science.[25] The king is compared to the master of a household and to a leader of young people who are taught and educated either willingly or unwillingly. Education is indispensible, without it nobody in cities or nations can reach perfection and happiness. Education in speculative virtues is by means of certain proofs, in the other virtues and arts by means of a persuasion. Persuasion and imagination, both of which the king must possess in perfection, are appropriate means of teaching the masses who serve the State only by their arts and crafts. Political leadership belongs to the elect alone. This is quite in keeping with Plato's views on education and on the three classes in the Rupublic. In fact, al-Farabi refers in his *Tahsil* to Plato in developing his own ideas on education for citizenship and thereby to happiness. In his introduction to his *Talkhis* on Plato's *Laws*[26] he states approvingly that Plato had refrained from disclosing and explaining the sciences to the people in general, but had followed the path of allegory and enigma so that knowledge might be withheld from the uninitiated. The first ruler is the most elect of the elect.......who aims at the complete fulfilment of his aim and purpose. He possesses knowledge of the Intelligibles by means of certain proofs and perceives Reality thereby. This is the foremost and most perfect science with regard to rule, and the other master-sciences are under the rule of this Science... the aim of it is the utmost happiness and ultimate perfection which man can reach.'

This science is called Wisdom or Philosophy; it originated with the Chaldaeans, that is Iraq, migrated from there to Egypt, then to the Greeks and Syrians until it came to the Arabs. After singing the praises of philosophy, Al-Farabi remarks that 'there is no difference between the philosopher and the first ruler.'[27] He possesses first all the theoretical and then all the practical virtues with certain insight, and has afterwards the power to bring them all into being in nations and City-States, in proportion to the possibilities of every one of their citizens. The political significance of philosophy could not be emphasized more clearly.

Whether the fact that Al-Farabi makes no mention of revelation and prophecy in the *Tahsil* has a special meaning or not can perhaps best answered in the negative by the following consideration: it may be conjectured that the *Madinat al-Fadila* was written first, since it contains the most elaborate superstructure to politics proper, as stated in the beginning of this article. The *Siyasa* has a much shorter account of revelation in which the term 'prophet' does not occur, since the imaginative faculty is not acted upon in the process of emanation. But imagination is essential and indispensible for prophecy, as is clear from the *Madinat al-Fadila*. The only conclusion to be drawn from the treatment of *Wahy* in Siyasa is therefore, that al-Farabi considered a ful exposition unnecessary,unless we assume a gap in the text of the *Siyasa*. On the other hand, one might take the opposite view and assume that the shorter vision is the first attempt and the fuller the more mature, later development. But against this view, I would point to the greater precision, concentration and more concisely argued presentation of the problem of happiness in the *Tahsil*. Unlike the two other treaties it does not follow so closely the pattern of Plato's *Republic*, but has a plan and arrangement of its own. The problem of happiness attainable in the State has occupied al-Farabi throughout his literary work. Without referring to other of his writings, he may well have allowed himself more brevity in the *Tahsil* in the conviction of having dealt with certain topics fully in his earlier works, if we are justified in assuming that the *Tahsil* is in fact the latest of the three, for the reasons I have advanced, the way in which the term "first ruler' is mentioned without introduction and definition, unlike *imam*, king and lawgiver, points, I believe, to my assumption. In the Siyasa the term 'firstruler' is still defined when introduced.

Conversely, al-Farabi speaks in the *Tahsil* of the lawgiver (*wad'u-l-nawamis*) whom he identifies with the imam and the philosopher, previously equated with the first ruler. A lawgiver in this sense is not mentioned in the two other treatises. That a revealed law, brought by a prophetic messenger to mankind, is meant can only be inferred by implication, that is, if the al-Farabi of the Tahsil understands by 'first ruler' what the al-Farabi of the *Madinat al-Fadila* has explicitly stipulated, namely, the philosopher-prophet. In the *Tahsil* the lawgiver is described as a philosopher first and foremost. He 'has the power, by the excellence of his reflection, to bring about the conditions by which the laws actually exist (effectively), and thus utmost happiness is attained.' Before he can lay down laws he must be skilled in philosophy and possess a nature of mastery, not of service. He must possess the speculative virtues and be capable of producing the states and conditions for the volitional intelligibles by which actual existence comes about. He must also possess the intellectual and practical virtues and the capacity for excellent persuasion and imagination.'[28] 'Philosophy is with the lawgiver what habit (*hexis*) is with the masses; what in his knowledge is certain insight, is with them persuasion and imagination.'[29]

That 'the meaning of *imam*, philosopher and lawgiver is one and the same'[30] is, thus, obvious.

'King' indicates dominion and power with utmost knowledge, reflection.....'! 'He is in his essence a philosopher and lawgiver.'[31] With the statement that 'the meaning of philosopher, first ruler, king, lawgiver and *imam* is the same'[32] the adaptation of the philosopher-king of Plato to Islam is complete. This blending of Platonic and Islamic qualifications required of the ruler of the Ideal State is al-Farabi's outstanding contribution to political philosophy in Islam and, as far as Maimonides is concerned, also in medieval Judaism. As I have stated elsewhere, the concept of Law provided the common ground necessary for the fusion of formative ideas between the two civilizations. But it has to be borne in mind that the *Shari'a* as prophetically revealed law is superior to the *Nomos* of Hellas, because only its fulfilment guarantees man the twofold perfection happiness in this and in the next life. Philosophy is the best guide to the understanding of the deeper meaning of the *Shari'a* for the faithful.[33]

Al-Farabi devotes the last pages of the *Tahsil*, as we have it, to a discussion of the nature of true and false philosophers in connection with the philosopher-lawgiver-imam-king. He says: 'one whose way it is to delve into speculation must be prepared by (natural) disposition for the speculative sciences; the following are the conditions which Plato mentions in his book on Politics......'[34]

He proceeds to summarize *Republic* VI, 484a-487a. This summary agrees in every essential point with the twelve conditions stipulated for the first of the Ideal State in the *Madinat al-Fidila*. This is not surprising since both descriptions are based upon the just-quoted passage in the *Republic*. Such superficial adaptations as 'love of *dirhams and dinars*' for Plato's 'love of money', or the naming of the pleasures of the body and the inclusion of 'gambling' for clarification, no doubt go back to the Arabic translation of the *Republic* (or of its Alexandrian Summary) and to al-Farabi; they do not constitute any real adaptation of Islamic conditions, such as the seven qualifications demanded of the imam according to al-Mawardi. That some of them are identical or similar, like '*adala'ilm and salama*, is accidental and simply the result of the same political blending of Platonic with islamic conditions, much less replacement of the *Republic by Fiqh* or by al-Farabi's own ideas, as far as the twelve conditions are concerned.[35]

We find in the *Tahsil*, however, an important and significant addition. The true philosopher must have sound religious convictions: 'he shall have perfect faith in the opinion of the religion in which he was reared, seizing the virtuous actions which (are enjoined) in his religion.[36] Al-Qifti mentions of al-Farabi's books on Political Science only the *Siyasa* and the *Madinat al-Fadila (as al-sira al-Fadila)* and states in the course of a brief characterisation that Al-Farabi "described the various kinds of perfect and imperfect states and the need of the (Ideal?) State for royal ways of life prophetic laws."[37]

The *Tahsil* concentrates on the nature and meaning of happiness of the citizens living in the State, and stresses the part the ruler has to play as the highest authority in the education and guidance of the citizens towards their attainment of the goal: happines as the Highest Good, the aim and purpose of Political Science. The theoretical and practical virtues and arts which the Head of State must possess in order to rule the ideal political association for the attainment of the happiness and perfection of all its members, in accordance with their natural disposition, can only be acquired by the study of philosophy. For al-Farabi philosophy means the philosophy of Plato and Aristotle which, he avers, is in essence one philosophy of Plato and Aristotle. Therefore, he announces at the end of the *Tahsil* his intention to describe first the philosophy of Plato and then the philosophy of Aristotle from beginning to end. Hence his stress on the political nature of Plato's *Dialogues* in his treatise *De Platonis Philosophia.* (The companion treatise *De Aristotelis Philosophia* has not yet been made available).

We must therefore look in the two other treatises, the *Madinatal Fadila* and the *Siyasa*, for a discussion of the perfect and imperfect rulers and their states. We now turn to a summary treatment of the relevant parts in both.

As stated before, al-Farabi enumerates twelve requirements in the 'first ruler' of the Ideal State. He was aware that it would be difficult to find such an ideal man and is, therefore, content to admit as ruler the man who combines five or six of the twelve qualities in his person.[38] The second ruler must also fulfil six conditions; in the first place, he must be wise, that is a philospher; next he must know and keep the laws and rules of conduct of the first rulers and observe them all in his own actions as an example and an obligation; then he must be able to decide points of law which have not arisen before by following the example set by the first *imams*. He must further possess insight and knowledge to cope with entirely new problems unforeseen by the first rulers, guided by the best interests of the State, and give guidance and direction to the laws of the first imams and to his deductions from these laws. Finally he must master the subordinate and leading art of war. There is here much more affinity with the conditions which the *Khalifa* has to fulfil, in content and in terminology. But it should be noted that, in stipulating skill in the art of war, al-Farabi does not speak of *jihad*[39]. He speaks of the ruler in general, including that of the Muslim State.

Besides, he leads back to Plato's pattern by his statement that if the necessary conditions are not found in one man but in two of whom one is *hakim*, a philosopher, while the other is endowed with the remaining qualities, both together shall be the rulers. If the qualities are dispersed among six different men, all six together rule as "the most excellent rulers," that is, Plato's *aristoi*.

But if wisdom (or, philosophy-*hikma*-) is absent from the government, the State is without a king even if other conditions are full-filled. It will gradually perish, if no philosopher is attached to the ruler in charge of the State.[40]

This means that the philosopher alone guarantees the survival of the Ideal State which was founded by the first ruler who, to repeat, was philosopher, prophet, king, lawgiver and *imam* in one.

The States in opposition to the ideal State are discussed in the *Madinatal Fadila* and more fully in the *Siyasa*. Since I have dealt elsewhere with these constitutions based on Plato's *Republic*,[41] I shall review them here only very briefly. It is again to be noted that al-Farabi judges these imperfect States by their ideas of the human end: happiness. He is not interested in their constitutions as such. As far as their numbers go, al-Farabi differentiates more than Plato, and their designations are partly derived from Plato and partly represent Islamic notions. They are called by a collective name 'ignorant States[42] which are, then, subdivided into a number of States or associations, much in the way of Plato's subdivision's although with thim they are not all separate constitutions, as will be seen later.

'Ignorance' as opposed to knowledge is used by Al-Farabi in the same sense as by plato in the *Republic*,[43] but may well have in addition *the meaning which jahiliya* 'ignorant' State do not know happiness as it is understood in the Ideal State. They aim only at external goods, like health, wealth, the pleasures of the senses, desires or honour. This State is divided into an association of States according to the various aims just mentioned.

The first is the *State of Necessity (darurriya)*; its inhabitants aim at the necessities of life, like food, drink, clothing, dwelling, carnal gratification, and they assist each other in securing their object.[44]

Next comes the State called in the *Siyasa the vile State (nadhala)* whose citizens aim at wealth and riches for their own sake.[45] 'The base and despised State' receives its designation from the aim of its citizens: the pleasures of the senses, games and other pleasantries.[46]

Al-Farabi next mentions *Timocracy*[47] whose citizens assist each other in their striving for honour, glory and fame. Honour is of two kinds, the honour between the one worthy of honour because of some virtue in him, and the other who, in honouring the first, recognizes in him his superior. The other kind of honour is accorded to men because of wealth, victory, authority and the like. This honour-loving State is the best of the ignorant States. Al-Farabi may be influenced by Aristotle[48] in his attitude to Timocracy, as is also Averroes whose treatment of the ignorant States' closely follows that in the *Siyasa* though not in th same order as here.

Tyranny (taghallub) is so called because the citizens aim in their cooperation to be victorious over others, but refuse to be vanquished by them. Absolute mastery and the pleasure resulting from 'victory' is the purpose of their effort.[49] Al-Farabi dilates in the *Siyasa* upon the various kinds of tyranny, surpassing in number the honour-loving States in accordance with the desire of the tyrant whose will rules supreme. This is a differentiation within the broad distinction between tyranny, exercised within the State by the tyrant and his helpers as master over the citizens, and tyranny of one State over others outside.

Democracy (jama'iya) is characterized by the freedom of its citizens to do as and what they please; they are equals and nobody exercises dominion over another. The one who governs them does so only with the consent of the governed.[50]

The 'State' discussed so far by al-Farabi correspond to Plato's four imperfect States: timocracy, oligarchy, democracy and tyranny. The Arabic terms used correspond to the Greek terms with the exception of *nadhala* and its near-equivalents *khissa (khasisa) and shaqwa*. It is clear from Averroes' Commentary on Plato's *Republic* that they represent oligarchy and plutocracy, its equivalent.[51] Averroes uses al-Farabi's three terms to characterize the viciousness of "the rule of the few' or "the plutocratic association"; the former is Platonic and the latter goes back to Xenophon. Averroes calls this State also hedonistic.[52] On the other hand, al-Farabi distinguishes between the State aiming at wealth (*nadhala*) and the state aiming at pleasure (*khissa wa-shaqwa*).

To these four States al-Farabi adds three more 'ignorant States'[53] the vicious (*fasiqa*), the transformed (*mubaddala*) and the erring (*dalla*) States. The opinions of the *madina fasiqa* are those of the Ideal State, that is, its inhabitants have the right beliefs and convictions and know what happiness is; but in their actions they are like the citizens of the states of ignorance.[54] They can, therefore, not reach happiness at all.

The *madina mubaddala* is only mentioned in the *Madinatal Fadila.*[55] Originally its opinions and actions were those of the Ideal State, but later on other opinions found an entry into it whereby its right opinions were transfromed and its actions changed.

The State in error (*dalla*)[56] is to all appearances like the Ideal States; but its inhabitants, though imagining to hold right beliefs about God, the Active Intellect and happiness, in fact hold corrupt beliefs. Similarly their 'first ruler' sometimes imagined to have received a revelation which, however, was fraudulent. True happiness is unattainable for them, since false opinions and wrong actions had been prescribed by their ruler on account of his error.

It is significant that all three terms occur in the Qur'an and must have had a quite definite meaning for every believer. The same applies to *jahiliya and* to *saqita*, if this term is correct in the *Madinatal Fadila* 80.5. Bearing their Quranic context in mind, it is more than likely that al-Farabi used them intentionally in order to effect an assimilation of Plato's four vicious imperfect States to Islam and Muslim notions. It appears probable that right beliefs and convictions and their contrast are understood by the Muslim philosopher both in their Platonic and in their Islamic meaning; the more so since he follows up the description of these ignorant States by a statement in the *Madinatal Fadila* of the knowledge required of the citizens of the Ideal state, in terms similar to the detailed discussion in the *Tahsil*, which has been summarised earlier. The philosophers of the Ideal State acquire their knowledge by means of demonstration and insight and teach it to their followers. But all others must be taught by allegories. The aim of the Ideal State is true happiness, whereas the aim of the different kinds of ignorant States is merely the happiness of their respective kings. The vicious States arise because their religion is based on corrupt opinions.[57]

Al-Farabi includes among the ignorant States yet another category whom he calls *nawabit.*[58] They live as isolated individuals in States and are for that reason debarred from reaching true happiness, although at least one of the six kinds distinguished by al-Farabi 'are not opposed to the Ideal State, but follow the right road and seek after truth.' These individuals play an important part in Ibn Bajja, who understands them in an entirely positive sense and identifies them with the *strangers*[59] and with his *mutawahhid*.

That this is not the only point of contact between Ibn Bajja and al-Farabi I hope to have shown on a previous occasion.

The *Strangers*, whom Ibn Bajja rightly traced to the Sufis, thus not only form a link between Al-Farabi and Sufism, but also supply corroborative evidence for the view that happiness and highest perfection are possible only for those citizens who play an active part in the Ideal

State ruled over by the prophetic philosopher king. Those who are 'the excellent, best and happy men' in the Ideal nation or State are only 'most excellent strangers' if they are dispersed over a number of different places which are not under such an Ideal government. Averroes endorses al-Farabi's view which is the view of Plato and Aristotle, but not that of Ibn Bajja whose *mutwahhid* can reach happiness in isolation even in imperfect States.[60]

Of the great importance of Al-Farabi's political thought for Averroes evidence has been given on more than one occasion.[61] It will, therefore, suffice if this point is here touched upon only briefly.

There is broad agreement between the two thinkers about the human end, happiness, and how to attain it. The four-fold perfection, consisting in the possession of speculative, intellectual and ethical virtues and practical arts, is demanded by both; Averroes found them mentioned together by al-Farabi while they go back to Aristotle's *Nicomachean Ethics*.[62] The two methods of teaching: the elect by demonstrative proofs, and the masses by persuasion, are not only differentiated by al-Farabi and Averroes, but by all *Falasifa*, as well as by Jahiz and Al-Ghazali's.[63] Since both thinkers are Muslims it is only natural that they should insist on the true philosopher's need for strong and sound religious beliefs and convictions. That Averroes is more concerned with the *Shari'a*, and that he establishes a claim for the philosopher to be the only compentent interpreter of the inner meaning of the prophetic law is no doubt due to the circumstances of his own time, and to his life and activity under the Almohads. This more conscious Muslim attitude runs through the whole discussion of happiness and the opinions held by various people by which the character of the various States is determined. For Averroes insists on the overriding claim of the *Shari'a* as the repository of the will of God which is made known by prophecy. This Islamic attitude is reinforced by Averroes political realism which is responsible for his continued application of the teachings of the Republic to contemporary Muslim States. This is a feature entirely absent in al-Farabi.[64]

Where Averroes agrees with al-Farabi in detail, a distinction must be drawn between al-Farabi's own contribution and his reproduction of his sources, in the first place Plato's *Republic* and Aristotle's *Nicomachean Ethics*. This must be borne in mind in the case of a common terminology which goes back, as a rule, to the Arabic versions of the Greek originals or their summaries. That Averroes is usually closer to his source is due to the different type of books they are writing ; al-Farabi writes a book of his own, based on Plato's *Republic*; whereas Averroes writes a Commentary in the course of which he often reproduces literally Plato's argument.

But he frequently follows al-Farabi's interpretation and adaptation, especially in his introductions which sum up in advance Plato's argument; he then comments on it in detail. This applies also to his many theoretical digressions, though to a lesser degree. These digressions are usually based on Aristotle's *Physics, Metaphysics, De Anima* and Particularly the *Nicomachean Ethics*, and are mainly Averroes' own work, except for passages which agree so closely with similar discussions in the political treatises under review that borrowing can be assumed. Such an assumption seems justified since Averroes refers to the *Siyasa* and to the Commentary on the *Nicomachean Ethics*, which has so far not been unearthed.

The definition of Political Science and the division of the arts into master arts and subsidiary arts, common to both authors, may or may not go back to the *Nicomachean Ethics* and the *Politikos* in both. It is equally difficult to decide whether Averroes definition of *ikhtiyar* copied from *Siyasa* 42.7 or from *Nicomachean Ethics* VI, 2, 1139b (*proairesis*). But on the other hand, Averroes' statement that the Good is attainable by choice and free will first in the City-State as the smallest unit originates in *Madinat al-Fadila* 54.2f. Averroes' exposition of the intellectual virtues reads like a terse summary of *Tahsil* 26.11.27 end. That in his description of the 'Ignorant State' Averroes follows closely al-Farabi has been stated before. But it must be remembered that Averroes never copies slavishly in such a case, but shortens and modifies in the light of his better understanding of Plato' argument and its topicalty, and on the basis of his penetrating analysis of Aristotle. He is more concise and realizes the significance of Plato's constitutions and their transformations. In this, he shows not only remarkable insight into Greek political thinking, but is, moreover, convinced that Plato's and Aristotle's political philosophy is relevent to Islam in his own time. Earlier in this paper an example was given in connection with oligarchy, a term which is not used by al-Farabi. On the other hand, Averroes adopts terms coined by al-Farabi which, though based on the *Republic* were not used by Plato as constitutional designations, namely 'State of Necessity' and Ignorant States in Error'. But he does not speak of *madina fasiqa, madina mubaddala and madina dalla* because they are not directly related to Plato.

A few examples may illustrate the handling of his material as he found it in plato and al-Farabi.

Tyranny is for al-Farabi a mixed rather than a simple, imperfect State. It contains elements of timocracy and oligarchy which latter Averroes further defines as plutocracy or the hedonistic State. Al-Farabi already combines honour and pleasure including wealth, but he accommodates in the tyrannical State those who look upon wealth, games or the pleasures of the senses as a kind of honour to be aimed at.[65] Without transition he then treats of democracy.

Averroes follows Plato's discussion of the transition from timocracy to oligarchy but adds to his description of the oligarchical man the hedonistic. He says: 'Love of honour will be driven out of the soul of him who prefers the acquisition of money, and for this he will throw away all desires...........In general, the transformation of the timocratic into the hedonistic man is obvious, whether he takes delight in money or in the other remaining pleasures. The same seems to apply to the timocratic and the hedonistic State. For the plutocratic and the hedonistic State belong to the same cetegory.'

Then follows the application of Plato's argument:

'We often see kings becoming corrupted into such men. Similarly there is in our time the kingdom of men known as the Almoravids. At first they were imitating the constitution based on the Law— this under the first of them—then they changed (it) under his son into the timocratic (constitution), while there was in him also an admixture of the love of money. Further, it changed under his grandson into the hedonistic (constitution) with all the paraphernalia of the hedonists; and it perished in his time. The reason was that the constitution which was opposed to it at the time resembled the constitution based on the Law.'

We note that he attributes the downfall of the Almoravids to moral corruption and the consequent inability to resist the Almohads, who were animated by religious zeal for obedience to the *Shari'a* Islam and for the restoration of its purity.

A comparison of Averroes' treatment of tyranny, correctly reproducing Plato's argument, with al-Farabi's rather involved description of a hybrid State which he calls *madina taghallub*, reveals Averroes clarity of mind and precision of diction. Al-Farabi's description only faintly echoes the Republic, and what follows in the *Siyasa* is his own exposition; whereas Averroes the Commentator follows Plato to 587, with which he considers the theoretical arguments at an end and his task fulfilled. He ignores what cannot be proved, but what can be proved is valid and applicable to political reality.

This being so, there is still a large area not only of agreement with, but of actual borrowing from Al-Farabi, as the few examples quoted at the beginning of this section show. Thus, Averroes accepts Al-Farabi's definition of king, lawgiver and *imam*, and his identification of philosopher with these three, making a reservation with regard to the necessity of prophecy in the Ideal Ruler. Again, both thinkers agree in the views that without philosophy there can be no Ideal State.

An interesting instance of adaptation is Averroes modified acceptance of al-Farabi's intermediate stage between monarchy and aristocracy, man who possesses "the other qualifications" demanded of the second ruler.[66] Significantly, Averroes does not insist, as al-Farabi does in the *Madinat al-Fadila*, on the philosophic qualification, but follows al-Farabi's exposition in the *Fusul al-Madani*[67] Averroes introduces the third treatise of his commentary with a summary of the imperfect States. He combines Plato with al-Farabi, as we often find in his introductions to a detailed commentary on a section of the *Republic*, and in his digression. The Hebrew text is difficult and can only be understood by comparision with al-Farabi, in this case with the *Fusul*. The relevant passages follow here in translation. This will enable us to see Averroes at work and to observe one of the characteristic features of his Commentary: his judicious use and adaptation of material borrowed from al-Farabi. After enumerating Plato's five constitutions Averroes remarks that if we divide the first, ideal leadership into that of the king and the best (*Aristoi*), there are six. He goes on:

(A) "For if there is placed over this administration one in whom five conditions are combined namely, wisdom, perfect intelligence, good persuasion, good imagination, capacity for (waging) *holy war* and no physical impediment to the performance of actions *in connection with holy war*, then he is absolutely king, and his government will be a truly royal government."

(B) "But when these qualities exist only separately in a group (of people) so that the first contributes to the end (of the State) through his wisdom, the second contributes that which leads to the (same) end through his intelligence, the third possesses good persuasion, the fourth a good imagination and the fifth a capacity for (waging) *holy war*, but they help each other to bring about and preserve this constitution, then they will be called the elect princes (that is, Plato's *aristoi*), and their rule will be called the exalted and choice rule (that is, aristocracy)."

(C) "It also happens sometimes that the ruler of this State will be one who does not attain this status, that is, the dignity of king, yet he is expert in the laws which the first (lawgiver) laid down, and possesses a good (power of) conjecture, so as to deduce from them what the first did not expound, for every single legal decision (?) and every single law case. To this category of knowledge belongs the science called among us the art of jurisprudence. In addition he has the capacity for (waging) *holy war*, and he is called king of the laws."

A,B and C correspond closely to $53 A,B and C in Dunlop's English translation. The six conditions in the *Fusul* are reduced to five by Averroes who treats, quite logically, as one, Al-Farabi's "(e) power to fight the holy war in person; and (f), that there should be nothing in his person to prevent him attending to matters which belong to the holy war." The end of A in Averroes is a well-defined, concise summary of al-Farabi's "He in whom all these are united is the model to be imitated in his ways and actions, and his words and counsels are to be accepted. It is his prerogative to rule all he comes to, and as he wills."

B is practically identical with B, except that Averroes is again more specific with regard to the first two conditions, where the *fusul* have: "..........one of them provides the end, a second provides what leads to the end."

In C Averroes is more precise and to the point, and actually combines the passage in the Fusul with that in the *Madinat al-Fadila* (60.19.61.6), the description of the second ruler; but like C, he leaves out the first of the six conditions: "he shall be a philosopher," and seems to follow C in the use of *jihad* since the *harb* of the *Madinat al-Fadila* should have been translated by *milhamah*, and not by *sheqidah* in our C. Apart from the compression of the corresponding passages in the two treatises which not only simplifies but greatly clarifies Al-Farabi's description, Averroes adds the sentence about jurisprudence. This enables him to express the legal qualifications of the ruler in one term *dayyan* which stands for (a)-(e) of Fusul $53 C and for the second of fifth conditions of the passage referred to in the *Madinat al-Fadila*.

He says: D "However, it may not happen that both these (qualifications) are found in one man, rather the one (capable or) waging holy war being another than the legal expert.[68] Yet of necessity both will share in the rule as is the case with many of the Muslim kings."

Before interpreting these passages in al-Farabi and Averroes, we must briefly discuss the meaning of the terms *holy war* and *legal expert*. On the basis of the *Fusul* and in view of the almost word for word agreement of Averroes's text with it, we must assume that Averroes used the term *jihad*. The Hebrew translator was unaware of its technical meaning and legal connotation and simply translated the basic meaning of the root *jhd* by the corresponding Hebrew root *shaqad*, hence *sheqidh*, 'assiduity' and derived from it, perhaps also 'perseverance'. The same applies to his translation of umur *jihadiya by ma'asim shoqedim*. It is interesting, as has been remarked earlier,[68] that al-Farabi avoids the use of *jihad* and *jihadiya* in the *Madinat al-Fadila*, but uses instead *harb* in the combinations *a'mal al-harb and sina'a harbiya* (61.5f). This may be explained by the difference in purpose of the two treatises. The *Madinat al-Fadila* was intended to convey al-Farabi's political philosphy and is for that purpose provided with its elaborate philosophical superstructure, as stated before. Al-Farabi develops his political ideas against this background and gives them a general application. Although the Muslim ruler is naturally included, non-Muslum rulers, expecially the Ideal Universal State, are by no means excluded. Moreover, al-Farabi speaks both as a Muslim affirming the claim of Islam to universality and as a philosopher on the basis of the Hellenistic *Oikoumene*.

On the other hand, the *Fusul* are more narrowly conceived, as far as one can judge by the translation of a fragment. It is possible that al-Farabi had his patron Saif al-Dawla in mind when writing them. This would, at any rate, explain why he included the duty of *jihad* among the conditions of the ruler. Saif al-Dawala certainly excelled in matters of *Jihad*.

As far as Averroes is concerned we cannot be certain, in the absence of the Arabic original of his Commentary, whether our explanation of *sheqidah* as meaning *jihad* is correct. But it seems at least probable.

The translation *legal expert* for the Hebrew *dayyan* is a little more conjectural, because there is no exactly corresponding passage to D in al-Farabi. But the juxtaposition of *dayyan*, which literally means "judge," and *shoqed* which means "capable of waging *jihad*" makes it very probable that the Arabic term rendered by *dayyan* must reflect the legal qualifications demanded of Al-Farabi's ruler. The context makes this very plausible. We have already remarked on Averroes' adaptation of the statement about the joint rule in the *Madinat al-Fadila* the second ruler is replaced by two men, the philosopher and the man who possesses the other necessary qualifications, namely expert legal knowledge and independent decision as well as ability to wage holy war. Averroes replaces the second ruler by the `king of the laws' of the *Fusul*. He thus drops the philosophic qualification of the *Madinat al-Fadila* and divides the remaining qualifications-of the king of laws' into legal expertness in one man and ability to wage *jihad* in the other. The Fusul do not have this division. Averroes' combination of the *Madinat al-Fadila* and *Fusul*[69] must, therefore, be recognised as deliberate adaptation to Islamic conditions, as his additional remark about the frequeny of this joint rule among Muslim kings clearly shows. It may also be recalled that in the *Fusul* it is only the first, Ideal Ruler who must be a philosopher.

We know that both these qualifications, power of independent decision on the basis of erudition in *Fiqh*, and power to wage jihad, are required of the *Khalifa*. Moreover, the right to and the duty of *ijtihad*, the rejection of and struggle against *taqlid* ---the unquestioning submission to authority---holds an important place in Muslim theology[70] from the earliest times.

On these grounds it appears probable that al-Farabi has a Muslim ruler in mind, at any rate in the *Fusul*. The case is somewhat different in the *Madinat al-Fadila* for the reasons I have stated before.

But even there the qualification of *ijtihad* is demanded although *hikma* is throughout the first and quite indispensable condition for a perfect State and its maintenance. Here al-Farabi is true to the Platonic ideal of the philosopher-king.

The combination of *ijtihad with jihad* guarantees the Islamic character of the State and its ruler, only that without philosophy neither State nor ruler can be considered perfect in the meaning of the term in the *Republic*.

Reference

1. See, e.g. Ibrahim Madkour: *La Place d'al al-Farabi dans Pecole philosophique*, Paris 1935; L. Strauss: *Philosophy and Gesetz*, Berlin 1935; Erwin I.J.Rosenthal: Maimonides Conception of State and Society-(M) in *Moses Maimonides*, ed. I. Epstein, London 1935; H.K.Sherwani: ***al-Farabi's political Theories in Islamic Culture***, July 1938, pp. 288-305. In view of the similar title of this interesting estimate of al-Farabi's originality as a political thinker, it may be said that my present study treats the problem from a different angle altogether. So, to avoid repetetion, the reader is referred to my earlier articles published in *Islamic culture: Some aspects of Islamic Political Thought (SAIPT) (XXII, i, 1940) and The Place of Politics in the Philosophy of Ibn Rushd (PIR) in BSOAS XV, 2, 1935. CP. also R. Walzer: Islamic Philosophy in: The History of Philosophy Eastern and Western London, 1935*. Further literature is quoted in my articles just mentioned. M. Steinschneider, Al-Farabi, St. Petersburg 1896, a poineer work of great learning , is still invaluable.

2. *De Platonis Philosophia ed. Rosenthal and R. Walzer, vol II of Plato Arbus*, London, 1943.

3. *Alfarabius Compendium Legum Platonis* ed. F.Gabrieli, vol III of Plato Arbus, London 1952.

   Until D.M.Dunlop's edition of the hitherto unpublished text of the *Fusul al-madani* from a complete MS. is available, the reader is refered to the same author's English translation of the Bodleian Fragment under the title: *Al-Farabi's Aphorisms of the Statesman*: IRAQ, XIV, 2, 1952 pp. 93-117. This translation is quoted in the last section of this article. It is difficult to judge the work by the English translation of a fragment; but it is apparent that it adds to our knowledge of al-Farabi's treatment of Political Philosophy in some important details. A proper evaluation must, however, wait for the publication of the complete text.

4. The following editions were used: Madina Fadila ed. F. Dieterici, Leiden 1895; philosophishe Abhandlungen ed. F. Dieterici, Leiden 1890l K. al-Siyasa, al-Madaniya, ed. Hyderabad, 1346 H; K. Tahsil al-Sa'ada, Hyderabad, 1345 H. The K. *al-Tanbih'ala sabili-l-sa'ada* is of no importance for our problem; I am, moreover, doubtful whether it is righty attributed to al-Farabi. Neither, its rather elementary nature nor its style and diction can approach his other works. But this is a matter for detailed investigation.

5. Mad. Fad. 46.14. happiness is defined ibid. 46.7 ff.

6. Tahsil 16.4 ff. See also PIB 197 with n. 35.

7. *N (icomachean) E (thics)* I, ii, 1094 ab.

8. See PIB 189 with n. 10.

9. Plato and Aristotle have shown Muslims "a way by which the matter of these statements of the Shari'a (that of the Creation out of nothing, the dominion of God, rububiya) etc, becomes clear and it (the Shari'a) is utterly correct and true." See Abhandlungen, 25.

10. Ibid, 53 and PIB 197 with n. 37, where the source for *al-Farabi's al-tashabbuhu bi-khaliq* was traced to Plato's Theaetetus, but it may equally or even more likely be plotinus (Enneads 1, 2).

11. *Abhdlg.* 25 ff.

12. Mad, Fad. 53.7 ff: siyasa 39.10 ff.

13. *Tahsil* 14.9 off.

14. So Madkour, op, cit., 183, quoted from Carra de Vaus's *Avicenne*, 104. See also PIR, 265 where I discuss this question of *oikoumene* in connection with Averroes and Galen.

15. *Mad. Fad.* 54.5 ff.

16. *Mad. Fad.* 46.7. ff.

17. *Tahsil* 2.

18. Tahsil 29. The whole section, from p. 22 on, contains a detailed description of the virtues and arts, and has served as a basis for Ibn Bajja and Averroes in relation to Politics.

19. NE I. ii '1094; *Politikos* 304.

20. This passage briefly sums up the relevant matter in Mad. Fad. 54-57.

21. Siyasa 49. 14f. This is rather surprising in view of Al-Farabi's statement (ibid. 3.19) that the Active Intellect is called *al-ruh al-amin waruh al-quds*, usually identified with the angel Gabriel who mediated God's revelation of Muhammad, as we know, e.g. from Averroes's *Tahafut al-Tahafut*, ed. Bouyges, 516.10. However Al-Farabi goes on to say that this is only the case if there is no intermediary between such an (angel) man

and the Active Intellect.

22. Siyasa 49.4.50.2.

23. This is a summary of Mad. Fad. 57.17-59.13.

24. Siyasa 50.7f. *al-nasu-l-fadilun wa-l-aklyar wa-l-su'ada*

25. What follows is based upon Tahsil 29-38; in particular 29.18 ff., 318 ff. and 36.8-38.9.

26. *Op. cit., 4 Cp.* for discussion of the distinction between the few elect intellects and the masses also M. Asin Palacios: *La Tesis de la Necessidad de la revelacion, en Islamy en la Escolastica* (*Al-Andalus* III, 1935, pp. 245-389). he discusses the problem of revelation and reason in Jahiz, al-Ghazali and the *Falasifa* from al-Farabi to Ibn Rushd, and in Ibn Hazm. He quotes Tahsil 41.11 to the effect that "Philosophy precedes religion in time." Before knowing this study I had been puzzled by this passage for a long time until I discussed quite recenlty this whole argument of al-Farabi's about demonstrative proofs versus persuasion and imagination with Prof. D.H.Baneth of the Hebrew University in Jerusalem. As a result I am inclined to think that in the phrase *al-falsafa tataqaddamu biz-zamani-l-millata* the last word, religion, is a misprint of al-malaka, hexis. So it is 41.1 as is clear from the context, from 40.11 ff. where *malaka* is used and meant, and from 44.7. If this correction is sound of above quoted passage 41.11 cannot be used as an argument in the prolonged discussion of the question of revelation and reason. Here is one of many example which shows how necessary critical editions of al-Farabi's writings are. See also PIR 2273.

27. Tahsil 39.13. Averroes expresses himself in similar words about philosophy as a natural gift to be met with among the peoples of Spain, Syria, Iraq and Egypt, all countries near to Greece, on the basis of Republic 425e 436a. His claim thus opposes Plato's view of the Greeks as the people most gifted for speculation.

28. Tahsil 41.17-42.11

29. Ibid. 44.7 ff.

30. Ibid. 42.11

31. Ibid. 42.19-43.8

32. Ibid. 43.18.

33. See my M 197 ff: SAIPT 6 ff.; PIB 193 f. and especially PIR 261 f.; 273 ff.

34. Tahsil 44.16 f. Siyasa is the term used for the Republic. Similarly Republic 487b-497 serves al-Farabi as model for his description of the false philosophers.

35. See Mad. Fad. 59.14-60.11. in other words, he describes Plato's philosopher-king as such, following the Republic, having previously established the identity between first ruler, imam, philosopher and Prophet (ibid. 57.17-59.13). This ideal ruler is *'aql bi-l-fi'l wasma'qul bi'l'fi'l* (58.1).

36. Tahsil 45.6 f. Plato also demands right beliefs and convictions, but especially Knwoledge of Reality which is superior to Belief (Republic 474a-480)

37. *Ta'rikh al-hukama*, ed. Lippert. 116.

38. The following summary is based upon Mad. Fad. 60.11-61.15. There is nothing corresponding in the Siyasa.

39 But see Dunlop, op. cit. $53 C " that he should be abl to go on the holy war". The Fusul say nothing about the combined rule of two men, but deal in A with the first ruler, in B with a group of *aristoi* and in C with our 'second ruler' but stripped of his first qualification, that of philosopher. It appears that the ruler in the Fusul is modelled less on the Platonic than on the Muslim pattern. These passages in the Fusul will be commented on in conncection with Averroes in the final section.

40. Mad. Fad. 61.11-15.

41. In PIB and in the Notes to my edition of Averroes' Commentary on Plato's "Republic" which is in the press and will appear in the *Cambridge Oriental Publications* (Cambridge University Press).

42. *Madina jahiliya or ahl, al-jahiliya in the Mad. Fad. (jahila in the Siyasa).*

43. See Mad. Fad. 61; Siyasa 58.7 ff.

44. See Mad. Fad, 62.4 ff. Siyasa 58.11-59.222 with a detailed description of the means whereby the necessities of life can be acquired (agriculture, hunting etc.)

45. Siyasa 59.3-12 including a characterisation of its ruler. Dieterici reads

(Mad.Fad. 62.6) baddala which should be changed to *nadhala*. In PIB I put the question whether *nadhala* was perhaps corrupted from baddala, in view of mubaddala and mutabaddala which are both meaningful. In fact, baddala is simply a misreading of nadhala which is correct.

46. Mad. Fad. 62.8 ff. *khissa wa-shaqwa*; 59.12-19 khasisa. Averroes uses the term *himud* in his Commentary, just as the Hebrew translation of the Siyasa renders khasisa by hamudah.

47. Mad. Fad. 62.10-18 *madina karma*; Siyasa 59.20-60.15. The various kinds of honour are fully discussed ibid. 60.16-64.2.

48. NE. VIII, 10, 1160b.

49. Mad. Fad. 62.14 ff.; Siyasa 64.3-69.3.

50. Mad. Fad. 62.16 ff., Siyasa 69.4-71.5.

51. Averroes calls it "the constitution of the vicious", the plutocratic association based on money", "the rule of the few," and characterizes it as "a vile, despicable and base rule."

52. It is the seventh of his eight constitutions: "..the government of the pleasure seeker. This is that constitution in which the rulers aim at pleasure alone."

53. Mod. Fad. 61.17 f. *fasiqa, mutabbadala (mubaddala* 63.1) and dalla; as well as saita (80.5); Siyasa mentions and describes only fasiqa and dalla.

54. *Mad. Fad* 62.21 ff; *Siyasa* 73.16-74.3.

55. 63.1 f.

56. *Mad. Fad* 63.3-16; *Siyasa* 74.4-7, much shorter.

57. This is of course a Platonic notion, See *Mad.Fad.* 69.6-73.16; Siyasa 71.6-73.15 in much greater detail.

58. See Mad. Fad. 61.18; Siyasa 57.11 ff. and at great length 74.8-end of this treatise. I have dealt with the *nawabit* in my PIB and must forgo a repetition here. Cp. PIB 203 ff. with ns. 55-59. *al-nawabit fi-l-mudun* of n. 59. should go up to n. 58 after *fa'inna*.

59. *Al-ghuraba* (Siyasa 50.12). See L. Massignon, *La Passion d'At Hallaj*.

paris 1914/21 pp 740 and 751 on *ghuraba* and also H. Corbin, *as-Suhrawardi's Opera Metaphysica et Mystica* II, Tehran 1952, p. 86 and 97 f. (*Qissat al-Ghurbat al-Ghahbiya*).

60. See PIB , 205 with n. 63.

61. See my M, SAIPT, PIB, PIR and the Notes of my editon of Averroes' Commentary on Plato's Republic.

62. NE I. vii, 1098a; I. xiii, 1103a (intellectual and moral virtues); X. vii, 1177a (contemplation); 1177b (practical virtues).

63. It need not necessarily go back to Cicero, as Mạdkour op. cit., p. 22 suggests. see n. 25, above.

64. See PIR, 274 ff, 2270 ff.

65. See Siyasa 62,5,9 ff., 61; 68.2-69.3.

66. *Mad. Fad.* 618.

67. See Dunlop, op, cit. $53 C. I am indebted to Mr. Dunlop for giving me the Arabic terms relevant to my argument.

68. Mr. Dunlop infroms me that the MS, on which he based his translation reads *Jihad and umur jihadiya* for the Hebrew *sheqidah and shoqedim. Shoqed* presumably goes back to mujahid in the lost Arabic original of Averroes.

69. See above, p. 167-with n. 2.

70. Whether this means that Al-Farabi himself has modified his views and that the Fusul are later than the *Mad. Fad.* can, if at all, be decided when the whole text of the Fusul is available. For the moment , the discrepancy between the second ruler of the *Mad. Fad.* who is philosopher and king of the laws ', and the third stage in the Fusul, namely, the king of laws', may simply be due to the different purpose and reading public of the two treatises.

When looking at the Mad. Fad. alone, I was first inclined to assume that the Hebrew translator might have misread *hakim for hakim*-provided Averroes reproduced the pasage of the *Mad. Fad.* But hakim would hardly be used to denote a judge since it means governor` as well. It is more likely that the Hebrew translator found *faqih* in the Arabic text of Averroes.

Plato's *'judges'* of Republic 405a are rendered by *shofetim*, presumably translating *qudat* in Averroes' comments. Moreover, if shoqed translates mujahid, as I assume, dayyan would presumably represent *faqih* most likely.

71. See. I. *Goldziher streitschirift des Gazali gagen die Batinijja-Sekte,* Leiden '1916, *Einletung*, esp. pp. 1-22.

THEORY OF KNOWLEDGE OF AL-FARABI

Gulshan Majeed

Knowledge as understood by Abu Nasr Mohammad al-Farabi is the act ultimately leading to bliss; the bliss which is the stage of perfect enlightenment admitting least distinction between the known and the knower.[1] Thus essence of knowledge is the self knowledge. Farabi identifies the act of creation with the self knowledge of God. It is through this self knowledge that motion enters the world.[2] Bodies tend to move to their perfection. The ontological state of a being is directly proportional to the amount of knowledge possessed by that being. Perfect knowledge is the complete fusion of known and the knower. Farabi tries to eliminate the element of desire, which is the expression of some lack in the self knowledge of God, by claiming a complete unity[3] between the God as knower and the God as known (The object of His knowledge). But, the identification, of the act of creation with the act of knowledge, howsoever minutely and absolutely concieved raises a problem, nearly creating an impression of duality. The problem concerns the nature of God hood and the eternity of the world created as an act of His knowledge.[4]

> "The world is certainly God's work though it comes after Him as a world form, yet it is equal to Him in time or eternal in sofar as He could not begin to work on it in time. The reason for this is that the God is to the world exactly what cause is to the effect. Since the cause in this case is inseparable from the effect,

> it follows that He could not, in a given moment start making it. For if he could that would simply imply imperfection on his part while he had been trying to achieve his goal. This of course is incompatible with the absolute perfection of the God.[5]

In order to absolve himself of any charge of inconsistency he tries to overcome or remove it through his "unique brand" of the concept of "unity of being". He says that God and the world are necessarily associated. There is no time gap between the act of creation and the `period' when God was without his creation. So the God and his creation which is infact the `act of his knowledge' are united in this knowledge.

Self knowledge and self awareness is at the base of his ontology and cosmology. Man also knows himself in act and what he knows does not belong to him in essence. Hypothesis of reminiscences, as upheld by Plato does not hold good for Farabi. Knowledge is achieved; it is not with him all the time so that he has only to recollect it. All our knowledge is acquired. Knowledge starts with the sensibles or intelligibles and the act is so rapid and unconscious that thinking of them seems as if we are only recollecting it. Farabi's theory of knowledge could will be studied under two heads. One is psychological in nature and another philosophical.[6] Psychological pole of the theory restricts itself with the study of acquisition of the first beliefs. Philosophical pole seeks the truth, validity and reliability of the beliefs and general opinions formulated during the psychological process. Psychological and philosophical processes go on simultaneously. There is no necessity (save logical) that one aught to proceed another.

With the enlightenment of the human kind as goal, Farabi like his 'old master' Plato sets out to find the nature of knowledge, object of knowledge and the content of knowledge. In his search for the definition of knowledge Farabi examines the various theories and concepts; the three main concepts which thus emerge are

(a) Perception and sensation.[7]
(b) Belief, opinion or judgement.[8]
(c) Knowledge or understanding.

Our knowledge about the world begins with the particulars. The perceptions of stimuli which our different sense organs receive from the sensibles provide us with the building material. The knowledge gained through these senses is conditional and relative. The belief in the conditional and relative nature of this knowledge is based upon the age old belief that there is no stability in the world. World is continuously in the process of becoming. Plato, whom Farabi follows in letter and spirit, writes that knowledge is not to be sought in the realm which is in the process of becoming and never is, i.e., '*me on*'. This knowledge is fallible as it concerns itself with the empirical world which is in a flux and always changing. Knowledge is to be looked in the realm of Universals.

Thus there are two levels of knowledge, the superior knowledge-which comes from understanding and rational insight and the knowledge of lower level comprising conviction and opinion which are proximal.[9] Unscientific and unexamined opinions are held by those whom al-Farabi calls vulgar.

The true knowledge has following features:

1. It is apprehended by intellect and reason
2. It is attainable and can be taught. Knowledge provides accurate account.[10]
3. Knowledge is concerned with Universals which are self consistent[11]
4. Matters of empirical facts are fallible, conditional and relative.
5. Knowledge is direct.[12]

For al-Farabi knowldege is virtue. It is in its highest form, a virtue in itself not a means to an end other than itself. Farabi identifies two kinds of virtues.[13]

(a) customary virtues which are relative to time and space and keep changing according to the needs and interests of the individual.

(b) Philosophical virtues which are permanent and transcend time and space.

The philosophical virtues are further understood under two subheads

(I) Theoretical Virtues (II) Deliberative virtues.[14a]

Theoritical virtues are again subdivided into (A) al ilm- which deals with exact scientific knowledge and (B) al-Hikmah: which deals with the 'mystic experiences' of a man.[14b]

Among the deliberative virtues Farabi mentions Practical wisdom (*al-taqqul*), discernment (*adhdhan*), excellence of judgement (*judat-ul-ray*) and correctness of opinion (*sawah-uz-zann*).

It is only the philosophical virtues which provide us the highest kind of knowledge. It gives the truest happiness which the soul seeks. As the earlier philosophers submitted themselves to what we now know as the fallacy of body-mind dualism the total benificiary of the true knowledge was the soul. Bodily pains and pleasures were thought to be accidental and inconsequential. The Sciences associated with the well-fare of the body were less rational and of lower order. Philosophical virtues were universal, stable and associated with the soul. A sublime soul was thought to be the receiver of the knowledge of highest order.[15] Farabi quotes Plato on the nature of the relation between highest knowledge and philosophy; he writes that Plato explains in his book known as *Theages* (The Experience)[16] "what that Theoritical Art is, which gives the man his true knowldege and hence happiness and then goes on to identify it with the philosophy". Farabi further adds that Plato called the philosopher the person who gives true account of that knowledge. Theoritical virtues, according to Farabi not only systematize our thinking but also order our actions.

The most basic methods of acquiring knowledgs about the things unknown are Investigation and Instruction.[17] Farabi stresses the need for *talim and tahdhib*. These include the dialectical methods so fruitfuly employed by Plato, and his successors. He relegates *zann and iqna* to a lower order. Induction and deduction are the methods of acheiving truth but they may also lead simply to opinion or conviction which fall short of a certain knowledge (*haq yaqini*) if employed uncritically.[18] Farabi employs both deductive and inductive methods in order to reach to the realm of truth. He laid the basis for the quinary division of reasonings. His *Kitab al Qiyas al sagir*[19] expalins the principles of syllogism which will in his opinion pave the way for correct thinking. "The art of logic gives, in general, the rules which, if followed can correct the mind and direct man on the right way, to truth, away from the pit falls of the error" In his treatise *What must proceed the Study of Philosophy"* he stresses the need for a methodology which will clear the thinking of all the false notions. He recommends a course in mathematics to achieve this goal. It helps the mind to pass easily from sensibles to intelligibles. Sensibles, as mentioned earlier provide only opinions while intelligibles belong to the Realm of Knowledge. He writes,[20]

> "One begins then first with numbers (i.e. arithmatics) proceeds next to magnitude (i.e. geometry) and then to all things in which numbers and magnitudes are inherent essentially (such as optics and magnitudes in motion which are the heavenly bodies, music, study of weights and mechanics). In this way one begins with things that may be comprehended and concieved irrespective of any material......
>
> "Untill he has come to the borderline between the genus that does not have any other principle of being apart from what it is and the genus whose species possess the four principles; it is at this point that natural principles come into view".

The above para contains in its body those ingradients which help to locate many cordinal points in the philosophy of al-Farabi. Perfect knowledge is the end point of a journey from concrete to the abstract; from our encounter with the objects of senses to the tranquility of the world of knowledge. It is necessary to purge oneself of the tyrany of the inherent association between the things (Factual or nonfactual), these associations are customary and habitual. Inferences on the basis of induction and deductions if deduced uncritically may lead us to false opinion or conviction rather than to knowledge.[21]

While discussing the immortality of the soul he makes it amply clear that only the souls of the 'men of knowledge' will survive. Souls of the ignorant will simply perish. The philosophers are men of reason, but he hastens to add that 'reason' is not simply adherence to the methods of logic which Sophists employed to prove and disprove the things at will. Logic is subordinate to epistemology which is the universal truth and not anything subjective. The quinary division of the reasoning given below lays bare the crux of the problem.[22]

1.	**Demonstrative Reasoning:**	Leads to certainty
2.	**Dialectical Reasoning:**	Leads to semblance of certitude through good intention. Good intentions are universal in nature. They intend good of the public and community.
3.	**Sophistical Reasoning:**	Leads to semblance of certitude through bad intentions. Basic interest is private and subjective.
4.	**Rhetorical Reasoning:**	It leads to probable opinion. They may have good or bad intentions but they are mainly carried by the words and the emotions. They persuade their audience by an appreal to their sentiments rather than to their reason.
5.	**Poetical Reasoning :**	Leads to imagery giving pleasure or pain to a soul.

The study of poetics as a branch of logic reveals the intentions of Farabi to treat poetics as a form of knowledge,[23] a knowldege which is restricted to imaginary worlds and the reminiscences of the past. It exploits the sense of loss or gain in the face of encounters with the external world. It is lower in the order because the knowledge poetics provide is not demonstrative. It generally appeals to emotions and sentiments.

Reason has the highest place[24] in the philosophy of al-Farabi. Highest knowledge is identified with intuition and reason. It brings at this highest stage an ecstasy and communion. It is the mystic experience only associated with a prophet or a philosopher. The reason or *Aql* has different connotations for al-Farabi, who is guided here by the Aristotiles *de Anima* through Alexander Aphrodiasas (198-211)

I) The reason as predicated of the man of reliable judgement who distinguishes between good and evil.

II) The reason as used by theologians to test the validity or invalidity of a statement

III) The reason as used by Aristotle in *analytical posteriore* to describe the faculty by which we attain the certain knowledge of axioms and abstract turths intuitively, i.e. without any need for a proof. This faculty is a part of the soul

IV) The reason which by experience distinguishes between the cases of good and bad.

V) The reason which helps us to attain the abstractive knowldege through.[25]

a)	aql Hayulani[26]	Passive intellect	Potential Intellect
b)	aql bil fil	active intellect	intellect in action
c)	aql Fa'al[27]	actual intellect	agent intellect
d)	aql mustafad[28]	acquired intellect	

Al-Farabi does not believe in reminiscenses. He differs here with Plato, (Socrates) who believed in the reminiscences of past experience knowledge is not with the man all the time so that he has only to recollect it. It is to be acquired, taught and learned. Knowledge of sensibles or intelligibles is so rapid and unconscious that thinking of them seems as if we are simply recollecting it. Thus Farabi distinguishes between the Primary knowledge and the acquired knowledge

The Primary knowledge is also acquired but one does not know how he come to possess it or where from he acquired it A man is not aware of it till he is questioned about it.

The acquired knowledge is achieved through meditation, investigation, inferences and study.

This knowledge is acquired through (i) Senses (ii) Imagination (iii) Cogitative (iv) Memory (v) Instinct (vi) Percept (vii) Concept (viii) Reason (ix) Speculative Intellect (x) Practical Intellect.

Senses[29]—— which acquaint us with the particulars but provide us a kind of knowledge much lower in the order. "The process by which organisms (including humans) acquire knowledge and beliefs about the world begin with particular perceptions or stimuli"[30]. Farabi denies the status of knowledge to the sensations. The immediate contact of the our senses with the sensibles provide the ideas which are the bases of our knowledge. Intellect recieves what the senses provide it. It is through the generalizing capacity of the intellect that the perceptions become part of the cognitive system of an organism. Senses present the mind with its basic data. Mind recieves the sensations. Sensations are nothing but the forms without matter. Al-Farabi calls this form a species of sensible things without form. Senses through which mind recieves its data are five in number: sight, hearing, smell, taste and touch. Sensations are stored in the mind.

Imagination (el-mutakhayila)[31]

Mind has a unique capacity to bring old sensations to life without any external stimuli. This capacity is better developed in the poets.[32] The past sensible experience may or may not create new experience but it makes the soul feel pain or pleasure according to the nuture of the past experence thus revived.

Cogitative[33] (al-mufakirah)

The experiences of the mind are infact the experiences created by the play of imagination. The images which keep appearing and forming are selected, combined, divided and put in new order and combinations by the cogitative power of the mind. It gives new associations of experiences but mind does not create out of nothing. Farabi does not believe in the creation *ex-nihlo*. The universal notions and intelligible necessities are not absolutely without any foundations. The sensible world provides the mind with its founding material. "Science even in its most sophisticated expression can never get away from the fundamental institutions of Euclidean space, of real time and of causal determination."[38]

Memory (al-hafizah)

Memory is one of the basic factors in the development and preservation of human civilization and culture; without its help no intellectual life is possible. Creation and imparting of knowledge is due to it. Memory provides the past which helps delineate one's identity; without its help there will be only the present.

Instinct (al-wahm)

It does not help us identify the right-and wrong but they, nevertheless help organisms to locate what is harmful and what is not. It makes them avoid the dangers. Farabi does not include instinct in the knowledge; instinct is an animal impulse, the behaviour to react against a stimulus or possibility.

Percepts:

A single unified awareness dervied from sensory processes while stimulus is present. Our mind cannot do without some object before it; abstraction comes latter knowledge of a particular or what Quine[34] knows as bodies, is no more than a belief about the elements of a generalization class that contains as its only element a particular body.

Concept:

It is the cognitive product of stimulus. Mind or a faculty of the soul has power of disposition to generalize from given features of the stimulation. This capacity for abstraction makes the knowledge possible "every significant part of our basic cognitive system is expressed in terms of generalization class.[35]" Universality according to al-Farabi is that common something which is abstracted from the concrete thing (percept)

Reason:[36]

It is the means to achieve knowledge of a higher order. It is the way to true happiness. It is not only the faculty of the cognition in man but it is also the governing body of the whole sublunary world. it is the ultimate principle of all beings. Farabi believed in order, in law and in a system. The best world is the one which goes by laws based on reason. For him

"The law is reason unaffected by desire. He identifies the scientific knowledge with philosophic wisdom.

Speculative intellect:

It is passive, active, acquired and actual.

Intuitive Knowledge:

Acquired intellect may rise to the level of ecstasy and perpetual bliss. It is the highest form of knowledge. It is through meditation and application of specutativ reasoning that the soul becomes transparant and able to see or perceive things without in any way being dependent on the external stumuli.

Universal notions[37] and intelligible necessities are in a way creations of mind and may be said to have no foundations in the sensible world but science in its most sophisticated expression can never get away from the fundamental intuitions of Euclidean space of real time and of causal determinations.[38] At the stage of intuition no such foundation are needed.

> "The sacred soul, pre occupied with what is above gives no heed to what is below and its external sensations never over whelms its internal sensations; and its influence may go beyond its own body affecting other bodies and everything in this world. It recieves knowledge direct from the highest spirit and angels without any human instruction.[39]

Al-Farabi uses the term 'ilm' in a more wider sense. He does not restrict it only to the knowledge which is spontaneous as is the general attitude of muslim scholars. He includes in it the knowledge acquired through reflexion and experience he does not submit to the theory propounded among others by Plato, whom he considers his master, that knowledge is a capacity very much innate or inherent in man. Farabi makes it amply clear that knowledge is to be acquired through instruction, experience and meditation.

Notes & References

1. Al-Farabi, *Risala fi'l Aql* p. 17, 10, 9
Averroes writes that al-Farabi says in his commentary *Nichomachean Ethics* "The supreme good for man is in this life and anything meant to attain it in the life to come is but folly. It is an old wives tale. c.f. Hammond, *al-Farabi* London, p 35.

2. O' Leary, *Arabic thought and its place in History* p. 155.

3. Hammond - *"al-Farabi Sources of question"* p 32. At the level of *al aql-ul-Mustafad* intelligible and intelligent are united, ignorant soul are perishable, al, R Walzer Greek into Arabic Oxford, 1962 p 22.

4. Ibrahim Moudkar, al-Farabi in *History of Muslim Philosophy* ed. M.M. Sharif, 1963, p. 459.

5. Hammond, al-Farabi, p 61, 78; Dr. Nazmi Loqa, *al Haqeeqat enda falasafatul muslimeen*, Maktaba Ghreeb, Misr al jadid, Cairo, 1982, 715. Mehmod Abdul Faiz al Manuffi, *al Din Falsafatuh Wa Ilm*, Darul Kitab-al Hadith, Egypt, 172-75.

6. *Al-Thamarat-al-Mardeyah; Fibad-al-Risaltal al Farabiyyah* Leiden, 1890.

7. *Al-Thamarat-ul-Mardiyah* p. 54; Tehsil us-saadah Hyderabad 45 of.

8. Elvin I.J. Rosenthal, The Place of Politics in the Philosophy of al-Farabi in *Islamic Culture.*

9. Objects of practical intellect are muable, their knowledge is proximal. The inductive generalizations based on this kind of knowledge is mere opinion *Fasus-al-Madani* p. 128.

10. Haq, The Conception of Ultimate Happiness in Muslim philosophy in the *Studies in Islam*, Delhi July 1964, pp 165-172; Haq *The Moral Philosophy of al-Farabi* pp 68 ff.

11. Al-Siyasa al Madinah, Hyderabad p 5 & 6. Theoretical intellect concerns with Universals, *al Madinah* p 84, *Tehsil-ul-Saadah* 4-16.

12. *Al-Aql-ul-hayulani.* The active intelligence acts on the potential intellect and bestows on it the capacity to apprehend, *Risalah fil aql* pp 121-20; Imagination, al Masa il-ul-Mutaffarriqah, 1344 AH, Hyderabad, published by Deimeterici under the title *R. fi jawab il ule anha.*

13. *Tanbih ala Sabil is Saadah* gives detailed and systematic exposure of virtues.

14. On the pattern of as *Siyasat ul Madinah*; *Fasul Madani* p 106-108; al *Tanbhi* 4, 6, 10-11.

15. *Fusul Madani* p 108, *Tehsil us Saadah* p. 2.

16. *Al Thamorat-ul Mardiya* p. 54.

17. *Stadia Islamica* - Islamic themes Vol. II p 94 (150) Dr. Nazmi Loqa, *al Haqeeqat* p 175. To make others understand something is of two kinds: either by making its essence to be truly conceived or communicating an image which symbolizes it. Similarly judgement is formed in two ways: either by a convincing rational argument or by persuasion. *Tehsil al Saada* p 40, 5 Sq cf *Prophecy in Islam* Fazl-ur Rehman p 60.

18. Hammond opcit; Al-Farabi, *Tehsil-al Saada* p 41, 12, 42 power of deduction through the excellence of one's cognition. Deductions are faulty unless and untill one is in contact with Active Intelligence.

19. *Ahsa-ul Ulum* p. 53.

20. Uneducated and unperfected souls in need of matter for their existence are corruptible and shall perish with the body, *Madina* - 67, 1; The intellectual nature of a being, therefore, depends on its degree of freedom from matter see M. Abdul Haq Ansari, *The Moral Philosophy of al-Farabi*, Aligarh, 1965 p 17; al-Taliqat, Hyderabad p 12; al Madinah, p 30.

21. "The divine prophetic soul in its earliest stages receives the emanation all at once without the need of syllogistic formulations". *Sharah Risalah Zanu al Kabir*, Hyderabad, 1349 AH p 9.

22. *Ahsa-ul Ulum* p 64-69.

23. Reality according to al-Farabi is intellectual. Farabi is an intellectual in ontology and epistemology; "It is not impossible that when a man's imaginative power reaches extreme perfection so that he receives in his waking life from the Active intelligence a knowledge of present and future facts or of their sensible symbols and also receives the symbols of immaterial intelligibles and of the higher immaterial existents and indeed sees all these - it is not impossible that he becomes a prophet giving news of the Divine Realm cf *Prophecy in Islam* p. 38.

24. Potential intellect is bound with body and perishable, *Al Siyasah* p 53;

Risale fil Aql p 31,32. "Theoretical reason [illegible] [illegible] [illegible] and intellectual things; practical reason deals with present and future particular things" cf. al-Farabi's Theory of Dreams - [illegible] [illegible] Rahman in *Islamic Culture*.

25. The History of Muslim Philosophy p 465, 468 Ibn Rushd - Tahafatul Tahafut, Cairo 1321/1903 p 126; al Thamarat p 42-43. Abstractive knowledge carries us further than the concrete things. Active intellect renders sensible things abstract.

26. Al Thamarat p 45-46; *Madinat*, 1896, p 52; Madinat Fadila p 44,1; Al Madinah p 83, 84, 91; R Fil Aql p 24,25. Farabi calls potential intellect immaterial (*Fasus-al-Hikam*); a part of the faculty of soul Risala fi'l Aql ed M boyes - Berut 1938 p 12; as simple, immaterial something (*Uyun al Masa'il*); It is a faculty possessed by human being. It is some kind of disposition cf Fazul-ur Rahman *Prophecy in Islam*, p 11.

27. Aql bi'l Fal bestows a new ontological status on potential and active intellect. They get separated from material. *Risala, Fil Aql* p 17, 9 sq cf Fazul-ur Rahman ibid p 12 ff 5.

28. Al Thamarat p. 54; Aql Mustafad is the final, highest form of human intellect see also Siyasat p 13. Self intelligible and self intellective: It is a form of form: It is developed and final form of human intellect. See *Prophecy in Islam* ibid.

29. *Risalah* p. 48-49.

30. *Ahsa-ul Ulum* p. 64.

31. The sensorial and intellectual inhabitionn keep the imaginative faculty supressed. Imagination is supposed to possess three functions (a) to retain the impressions of the sensible objects (b) to join and seperate them (c) representation and reproduction.

32. *Al Thamarat* opcit p. 45-46. Imagenation works differently in different men and in different condition. Sensible experiences may create under different bodily conditions fantastic associations. Imagination can arouse sexual urges by suggesting suitable images to the mind - *Madinat-ul-Fadial*, opcit p. 49-50

33. *Al Thamrat* opcit p. 44. Sensual images are sifted, divided and combined for future use of the mind *Madinat-ul-Fadil*, opcit 49.

34. Nathan Stemmer; The roots of knowledge Basil black well, England 1983,

180.

35. Ibid. *Madinat-ul-Fadila*, Dietrich's Ed pp 34-37 cf al-Farabi's Theory of Dreams

36. Mijid Fakhry - *The History of Islamic Philosophy. Al-Madinat-ul-Fadilah* 70-73.

37. Nathan Steemer ibid 183.

38. Maritiany - *Western Philosophy* p 964.

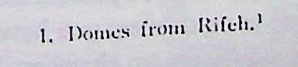
39. Al-Farabi - al Thamrat al-Mardiya, opcit.

THE HISTORY AND EVOLUTION OF THE DOME IN PERSIA

K.A.C.Creswell

It is my intention to trace the history and evolution of the dome in Persia from the earlist times to the present day; and I hope to show at the same time the very important part played by Persia in the evolution of domed construction, which I believe has never been pointed out before. Before I can do this, however, I must first briefly review the dome in antiquity.

There was a time when it was thought that the dome was not of really great antiquity, but this opinion can no longer be held. In ancient Egypt the dome was known at a very early date. At Hieraconpolis several domed *"shuna"* or store pits of about 6 feet in diameter have been found, which seemed to have belonged to houses of the pre-pyramid age. A model of a house of the Tenth Dynasty found at Rifeh shows a terrace roof with three little rounded cupolas just emerging through it, exactly like a style of house found at the present day in many parts of the East. The use of little domes for granaries was quite general. According to Perrot and Chipiez



1. Domes from Rifeh.[1]

"the granaries, barns, and storehouses were almost always dome-shaped. Those which had flat roofs seem to have been very few indeed".

In Chaldaea and Assyria also, the dome was known from very early times. The bas-relief found by Layard in the palace of Sennacherib at Nineveh (705-681 B.C.) shows buildings, some with hemispherical cupolas, and some with tall domes approximating to cones in shape; they are undoubtedly peasants' huts, which are constructed in the same way at the present day in many villages in Upper Syria and Mesopotamia. As regards Rome, the only domes known to Vitruvius, who wrote about the beginning of the first century, were those required for the hot chamber of the bath.

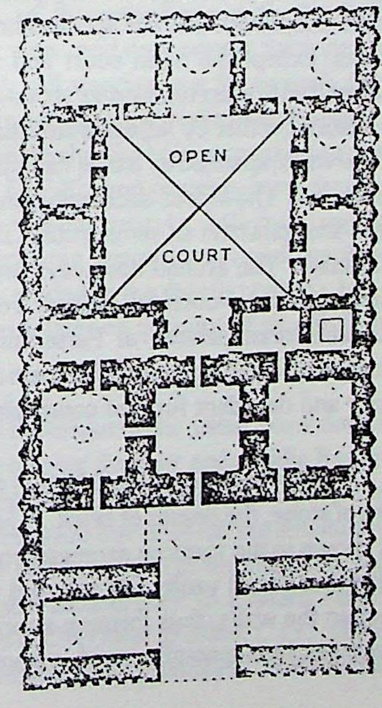
Now there is one thing common to all these domes, viz.: they are all small and used in buildings of secondary importance. In Egypt this is always the case, while in Chaldaea and Assyria the great palaces of Sargon and Sennacherib appear to have been built without domes. Strabo, who died A.D. 25, mentions the vaulted narrow rooms, and his remarks were confirmed by Place, who found curved segments of vaulting some 4 feet by 6 amongst the debris of the rooms of the palace of Khorsabad. Place found that in nearly every chamber (a fact that Strabo comments on) the length was at least twice the breadth, and in some cases four, five, or even seven times as great. This precludes the idea of a dome. In the palace of Sargon there are only two square rooms out of innumerable others, and there is nothing to show that these were covered with domes; they may quite well have been vaulted. So that we may say that in palace architecture the dome played no part at all, or next to none.

Now what is the explanation of the fact that the nations of antiquity I have mentioned, although they could construct domes, never used them in buildings of the first importance? I think the reason is this. It must be obvious to everyone that supposing you possess the art of building a dome, it will not be of much use to you, unless you have also devised a means whereby you can set it over a square chamber. We cannot compose a complex building, an aggregation of cells, like a palace for instance, of circular rooms; and unless we can devise a method of setting our domes over square spaces, we must abandon them in favour of vaults. All the domes mentioned hitherto have been set over circular spaces, or over square spaces by a makeshift pendentive which could not be trusted on a large scale. In Rome the domes mentioned by Vitruvius are set over circular spaces, and at a later date this is the case with the dome of the Pantheon. In this huge dome, 140 feet in diameter, which still remains the largest in the world, Roman dome construction blazed up and then almost died out. All the domed buildings erected by the Romans up to the time of Constantine, and indeed long afterwards, were circular in the interior. One thing, a satisfactory pendentive, was needed before domed construction could come to its own.

Now it seems to me that the Persians, who were the first people to solve this problem and devise a satisfactory pendentive, played for this reason a very important, in fact vital, part in the evolution of domical construction.

We will now consider the two earliest domed buildings in Persia, namely the palaces of Firuzabad and Sarvistan. I put Firuzabad first, contrary to the usual order, for reasons which I shall give later.

In Firuzabad we see the dome applied on a large scale for the first time, this dome being 45 feet in diameter, and we see also the means by which this setting of a really large dome over a square space became



2. Plan of Firuzabad.[1]

possible, viz. by means of a "squinch", a device wholly Persian. By the squinch, which here consists of a series of concentric arches, thrown across the angle, and advancing one over the other, the square is reduced to an octagon, upon which it is easy to set a dome. It is impossible to overrate the importance of this discovery, which, so to speak, ennobled the dome and gave it new fields to conquer, raising it to the very front rank as a method of rooting, a position it has kept in Persia ever since. In fact, I think I may make this generalization, that Persia is the land of the dome, whereas Mesopotamia is the land of the vault. While in Persia we have these two palaces in which the dome plays an important part, in Mesopotamia we have the palaces of Al Hadra (or Hatra) and Tak Kisra, where the vault alone is found. Later, in the palaces of Mashita, in the eighth century palace of Ukhaidir, and at Kasr Kharaneh, this is also the case, and even in the ninth century Beit ul Khalifah at Rakka.

The palaces of Firuzabad and Sarvistan are attributed to the Sasanian period by all authorities, with the single exception of Dieulafoy, who, in *L'Art antique de la Perse*, attributes them to the Achaemenian age. Firuzabad measures 170 by 320 feet and its plan is striking for its noble simplicity. All the spaces shown are covered by elliptical barrel vaults, except the open court and the three square rooms, which are covered with elliptical domes set on squinches. The stability of the vaults is ensured, either by adjacent structures or by large voids in the thickness of the walls, spanned by barrel vaulting, which Dieulafoy calls discharging chambers. The stucco decoration on the outside of this palace consists of reed-like pilasters of semicircular section, recalling the method used in Chaldaea. The arched doorways are set in frames surmounted with the Egyptian reed-cornice, which recalls the decoration used in the Achaemenian palaces at Persepolis and Susa, but this reed-cornice, instead of commencing with a vertical rise, spreads out, thus showing a later and decadent form of composition.

Sarvistan measures 120 by 140 feet and has three domes; the walls are of stone, the domes of brick. A great advance in scientific knowledge is shown in the vaulting arrangements. In order to lessen the thrust of the elliptical barrel vaults and to avoid very thich side walls, piers are built within the walls, thus forming a series of recesses (Plate, Fig. 1[3]). These recesses, be it specially noted, are nothing more than a development of the method employed at Firuzabad, by which the hollow spaces left in the thickness of the wall, in the former building, are here utilized to add to the floor-space of the hall itself. These piers do not carry transverse arches, but support instead either semi-domes or barrel vaults over the spaces between them, above which rises the central elliptical vault, its span being reduced by this arrangement from 26 (the extreme width of the hall) to about 17 feet.

It will now be easy for me to give my reasons for considering Firuzabad to be earlier than Sarvistan. Firstly, I would point out the highly evolved vaulting system of the latter compared with the simple planning of the former. Piers similar to those at Sarvistan are used in one of the halls at Ukhaidir to support arches carrying a vault. Piers are used also at Koseir Amra (c. 710) and Kasr Kharaneh, only the vaulting system they support is much more complicated. At Kasr Kharaneh there is a semi-dome or squinches exactly like what we find in the recesses at Sarvistan. Further, the Egyptian reed-cornice at Firuzabad, though decadent, still shows strong affinities with the Achaemenian palaces. To put it briefly, while Sarvistan looks forward and is the prototype of seventh and eighth century buildings, all the affinities of Firuzabad are with the past. Recently Dieulafoy has modified his view, and now admits Sarvistan to belong to the Sasanian period, though still standing out for an early date for Firuzabad. *Medio tutissimus ibis* is a very sound motto in archaeology as in most other things, and I think that we shall be safe in concluding that Firuzabad was built not later than A.D. 240,[4] and possibly considerably earlier, but not earlier than very late Achaemenian (c. 340 B.C.) owing to the decadent quality of the Persepolitan decoration round the door frames. As for Sarvistan it is usually placed in the fourth century, but I think it may quite possibly be a century later on account of its affinities with the buildings mentioned.

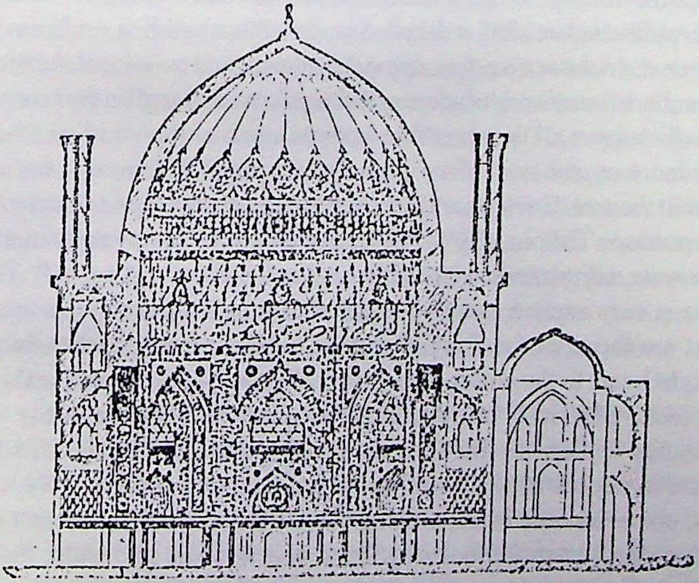
So far I have said nothing as to the origin of the dome. Now domes are built by the most primitive people all over the near and middle East at the present day with practically no appliances. Innumerable travellers in Persia have remarked, firstly, on the immense tracts which are absolutely treeless, and secondly, that wherever there is a lack of timber, there the houses are vaulted and domed with sun-backed clay. In Eastern Persia especially is this the case. Sven Hedin in *Overland to India*, i, 195, gives a view of a village about 100 miles north of Yezd, and says: "each house is a low, long rectangle of mud, and over each room rises a cupola-shaped roof of sun-dried bricks, for here at the margin of the desert there is no timber to make a flat roof." Domed huts existed in Mesopotamia in 700 B.C., as we see from Layard's slab, and no doubt they did also in Persia, like conditions producing like effects, and it seems probable to me that the dome was developed more or less independently in those regions where wood was lacking, and necessity forced the invention of this sort of roofing; and far from thinking the domes of Firuzabad and Sarvistan to be derived from Mesopotamia, I think they were simply a development of indigenous construction.

Lest an independent origin of the dome should seem improbable to you, I will mention that Miss Macleod found domes of sun-backed clay 20 feet in diameter and 30 feet high, built by the natives, in the German Kameruns.

We now come to the romance of the dome which is ushered in with the advent of Islam. The earliest Mohammedan dome known to me is that of the Great Mosque at Kum. This was built by Abu Sadaim Husein b. Ali al Ash'ari in A.H. 265 (878), and is 80 feet in height. The next dome, also at Kum, is that of the tomb of Mohammed b. Musa, who died A.H. 296. The dome over his grave was built in A.H. 366 (976). Sir Albert Houtum-Schindler, to whose book, *Eastern Persian Irak*, I am indebted for these dates, has very kindly informed me that these two domes, so far as he can remember, are of "a more or less hemispherical shape". This sounds as though the Sasanian form still persisted.

In the twelfth century we have the tomb of Sultan Sanjar at Old Merv, built before his death in 1157. The drum of the dome appears to be strengthened by buttresses at four points. The dome is 80 feet high and 40 feet in diameter (Plate, Fig 2[5]). A view of the interior in Zhukovski's *Ruins of Old Merv* shows that the dome is set on squinches, a feature we might almost have predicted with certainty.

In 1307 this splendid building was raised by Mohamed Khudabunda at Sultanieh. It is octagonal in plan, and the slight transition from the octagon to the circle on which the dome rests is effected by stalactite pendentives. The dome is 84 feet in diameter (the largest in Persia); a vaulted gallery runs round its base, and the stability of the structure is further ensured by eight minarets, one at each of the angles. The whole building was lined with Persian tiles; it had, according to De Guignes, doors of damascened steel, and both in planning and decoration it would appear to have been the greatest masterpiece of Persian architecture. I beg to invite your special attention to the shape of the dome. Contrary to what is usually the case in the West, its beautiful outline is not obscured by the piling up of material on its haunches. This feature is typical of the general ignorance prevailing in Europe in regard to dome construction. Fergusson, with his knowledge of Eastern domes, was the first to shed a ray of light on the problem in 1855, when he made an attempt to point out one of the chief fallacies to be found in European theories of dome construction.[6] Up till then the dome had been considered simply as a circular vault, and, like a vault, requiring a great amount of abutment. This error goes back to Roman times, as can be seen from the Pantheon, where perfectly unnecesssary masses of material are piled up on the haunches of the dome, giving it a very ugly exterior outline. It was reserved, however, for E.B.Denison (afterwards Lord Grimthorpe) to give a full, complete, and mathematical demonstration of the theory of the dome.[7] I cannot here go into all the interesting results obtained by him, although I must mention that he found pointed domes considerably superior to hemispherical ones.



3. Mausoleum of Khudabunda.

This superior stability of a pointed dome is interesting, as almost all domes in the East are pointed. Though all domes in the East are unnecessarily thick (as shown in the above paper), some are of wonderfully scientific shape, this one at Sultanieh for instance. I think it is also one of the most beautiful, as indeed it should be, since it satisfied the eye mechanically. Its internal construction, however, though peculiar and original, is not so scientific. According to Dieulafoy, it is made with an inner and outer lining, each a brick and a half thick, with a sort of cellular webbing between, made by intersecting ribs following the lines of latitude and longitude, so to speak, the hollow cells left being nearly square in shape. This construction is, I believe, unique so far as Persia is concerned, but I say, on the authority of Denison's paper, that this kind of construction is not to be commended, because it is not the best disposition of a given amount of material; strange as it may seem, the dome would be stronger if the inner and outer layers were brought together and welded into one, without the intervening cellular work. However, its shape is, as I have said, ideal.

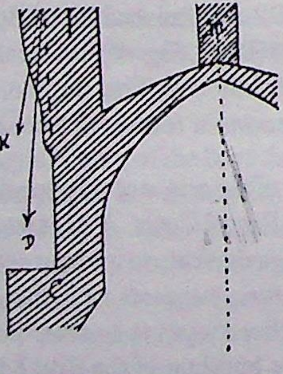
I cannot leave this building without referring to one extraordinary feature, which no doubt accounts for the intense sense of harmonious proportion which so many observers have felt on looking at it. Dieulafoy, who published in 1883 a detailed study of this building, in Cesar Daly's *Revue d'Architecture*, found that the interior and exterior elevations were set out in a framework of squares and equilateral triangles, the intersections of which gave all the chief fixed points, such as the width and height of the doorway, the level of the upper gallery, height of cornice, and so forth, so that the size of every part was related to every other part in some definite proportion. This is only what has been found in the parthenon, with, however, adjustments and refinements of another sort as well. That this idea is very ancient cannot be denied, since various relationships of this sort are found in the Great Pyramid, where, amongst other things, the height bears to the circumference of the base the same relationship as the diameter of a circle bears to its circumference. I believe this is the only instance in Persian architecture where anything of the sort has been discovered, but it might well be found in other buildings were it looked for, since the idea itself, although its existence was not dreamt of sixty years ago, is constantly being found over a wider and wider field. That literature contains no reference to it goes for nothing, as craft secrets of this sort were, no doubt, only imparted under vows of secrecy. By these methods a building, instead of being a collection of odd notes, became a harmonious chord in stone, a sort of living crystal; and after all, it really is not strange that harmonies of this sort should appeal to us through our sight, just as chords in music appeal to us through our hearing, since ratios such as the square root of two, and especially that which the diameter of a circle bears to its circumference, which enters into the equation of movement of everything is space-nay, further, into the movement of the very electrons of the atom itself-are fundamentals in time and space; they go right down to the very basis of our own nature and of the physical universe in which we live and move and have our being, and may well appeal to us sub-consciously.

The Musjid-i-Jama at Veramin is another example of a great building of the golden age of Persian architecture. It was built A.D. 1322 by Sultan Abu Said, the son of Khudabunda. The dome stands on an octagonal drum with narrow windows in each face, a feature of which this is the earlist example known to me, with one exception, Imamzadeh Yahia, also at Veramin, built A.D. 1186, according to Sarre.[8]

We now approach the Timuride age, when a great change is witnessed in the style of dome used in Persia. Up to this point all the domes met with are simple structures, and we have no example of the bulbous double dome. Now, however, a new type appears, which consists of the former type of dome, covered over by a slightly bulbous shell, which is superimposed on it, leaving a large space between. This style only appears towards the end of Timur's reign, his early building not having this feature. However, in the mausoleum of his wife Bibi Khanum (Plate, Fig. 3[9]), commenced in 1399 and finished in 1403, and his own mausoleum known as the Gur Amir (Plate, Fig. 4[9].), we for the first time meet with the double dome with slightly swelling outline, a type of dome which henceforth became a constant feature in Persian architecture.

No explanation of the origin of this peculiarity has been suggested by Fergusson, Texier, Pascal Coste. A. Gosset, in *Les Cupoles d'Orient et d'Occident*, describes the feature without comment, but Choisy, in his *Histoire de l'Architecture*, suggests an Indian origin, viz. that it was an imitation of certain bulbous topes to be seen there. Now as Timur was in India shortly before the building of the Bibi Khanum and the Gur Amir we must consider this possiblity. In the first place, these topes are solid structures and not examples of roofing, and the very small number that are bulbous are not the conspicuous and striking objects likely to be noticed even by a conqueror in his meteoric flight through the country. But could he have seen any double domes with slightly swelling outline? No! for not one of the domed buildings which were standing in the North-West of India in the time of Timur, of which remains have come down to us, have this feature. There are about seventeen of these buildings; they comprise the groups classed by Fergusson as Early, Middle, and Late Pathan. Amongst them are the tombs of Firoz Shah, Tughlak Shah, the Kalan Masjid, etc. All the domes found in these buildings are pointed in shape but low in elevation, and built in horizontal courses. They have nothing in common with the domes of the Bibi Khanum and Gur Amir. Saldin[10] suggests that this shape has certain mechanical advantages, viz. that it tends to the stability of the dome by constituting additional abutment. A more extraordinary statement it is difficult to conceive, since it is obvious that it must act outwardly in the same direction as the thrust of the dome itself.

Fig. 4 is a section of the dome of the Gur Amir. The dotted line produced from C shows the extent of the projecting part. Now the centre of gravity of the projecting part is roughly at B, and this part therefore will act with leverage AB/AC about the turning-point C, in direction AD. Now the thrust K of the upper part E is in the same direction more or less, and thus the projecting part adds to the difficulty instead of helping matters. This is shown when it comes to practical work by the interior construction

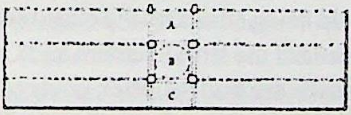


4. Section of Dome of Gur Amir

of this dome, which has a series of tie-bars T, fixed at their extremities in the lower part of the sides of the dome and meeting in the centre, where they are carried by a pile of masonry M. They are an imperative necessity to neutralize the unscientific shape chosen for the construction of the dome, and by their very existence refute Saladin's theory.

It is now clear to us that the shapes of the domes of the Bibi Khanum and Gur Amir could not have sprung from constructive necessities in brick or stone. When this is the case with other features in architecture we usually find that the feature in question is a copy of construction in wood, e.g. the mortised joints of the stone rail round the Sanchi Tope, also the metopes and triglyphs of the Doric order, the Lycian tombs in the British Museum, etc. Can it be so in the case of the slightly bulbous double dome? Is there, or was there, anywhere in the Moslem world known to Timur a double dome with swelling outline? Yes! at one place, and at one place only, and that was at Damascus, where stood the great Umayyad mosque built by the Khalif Walid in A.D. 705-13, the dome of which in Timur's time was *double and of wood*.

5. Sketch-plan of Mosque at Damascus.



Its plan was as shown. It consists of three aisles and a transept, at the intersection of which there was a dome B, which was called the Kubbat-al-Nasr (the Vulture Dome). The angles of this square are vaulted over with squinch pendentives, and the drum resting upon the octagon thus formed is set back 2 feet, so that the dome resting on it has an internal diameter of 43 ft. 6 in. The present dome, which was built at some date subsequent to the burning of the mosque by Timur, is of stone. Descriptions of the mosque at dates previous to A.D. 1400 are to be found in the diaries of the various Arab geographers who visited it between the ninth and the fourteenth centuries.

Ibn Jubair, who visited it in A.D. 1184, descants on the immense height of the great dome, which "broods over the void". He describes also how that it consisted of an *external* and *internal* dome resting on a drum. He describes his visit to the interior of these two domes: "Verily the entrance to the same, and into the interior, where is the inner dome-*like a sphere within a larger sphere*-is from the mosque...after passing over the flat roof we came to the Dome, and mounted into it by a ladder set there...We went into the round gangway (this was round the drum)....Then we hastened on to the entrance into the interior of the Dome, passing through one of the grated windows; and before us was a wondrous sight. We passed on over the planking of great wood beams which go all round the inner and smaller dome, which is inside the outer Leaden Dome, as aforesaid, and there are here two arched windows through which you look down into the mosque below....The Great Leaden Dome covers this inner dome that has just been described. It also is strengthened by wooden ribs bound with iron bands. The number of these ribs is forty-eight. The ribs converge above, and unite in a centre-piece of wood."[11]

One cannot help being struck by the close resemblance of the above description to the domes of the Bibi Khanum and Gur Amir, with the sole difference that these two are built of brick covered with enamelled tiles. The correspondence is close throughout; the peculiar feature of an inner and outer shell occures in both, both are ribbed, the Gur Amir having sixty-four against forty-eight, and the shape must have been very similar. That it was slightly bulbous there can be no doubt. Ibn Jubair says that the lenght of the mosque from east to west (which we know to be 455 feet) was 200 paces; a pace would therefore be just under 27 1/2 inches. He says later on that the circumference of the dome of lead was 80 paces, i.e. 182 feet; its diameter therefore was 58 feet. Now the exterior diameter of the base, still existing, of the drum on which it stood would appear from fig. 100 in Professor Phene Spiers' *Architecture, East and West,* to be about 52 feet. The dome of lead, therefore, must have overhung its base by 3 feet.

Timur appeared before Damascus on January 8, 1401, and the next day negotiations were opened with him by the citizens, and, on his guaranteeing their safety, the Bab Saghin was opened to him. After nearly two months spent in bargaining and extracting a ransom, the place was finally sacked, and on March 4 all the population that remained-men, women, and children-were bound and dragged off. On the 17th Timur ordered the city to be set on fire, and, sparks from the burning city lighting on the Umayyad mosque, it was burnt "till all that was left standing was a wall with no roof, nor door, nor marble".

Timur thus had this great mosque in view for over two months, and cannot fail to have been impressed, keenly appreciating architecture as he did, with this great building, in his day one of the Four Wonders of the World of mediaeval Islam. He was much more likely to have some of its most striking features reproduced for him at Samarkand than he was to copy a tope in India. There is ample evidence that Timur greatly appreciated architecture. He was greatly impressed by the Juma Musjid at Firuzabad (Old Delhi) and took a model of it home. Fanshawe states (p. 264) that he greatly admired the Kutb Minar, and carried off workmen to construct a similar one in Samarkand, which intention, however, was never carried out; and Don Ruy Gonzales de Clavijo, in his account of his embassy to Timur in 1404, relates many anecdotes to the same effect, as does Timur's biographer Sharaf-ud-din Ali. In addition to this the diameter of the dome at Damascus was 43 ft. 6 in. Now, accordig to Schubert von Soldern,[12] the diameter of the dome of the Bibi Khanum, the first building erected by Timur after his visit to Damascus, is 44 ft. 3 in., a difference negligible in domes of such a size. I therefore think I have shown, as nearly as such a thing can be shown, short of a direct contemporary historical statement to that effect, that this type of dome was first executed in brick by Timur after his return from Damascus as a copy of a wooden one of the same shape that he saw there.

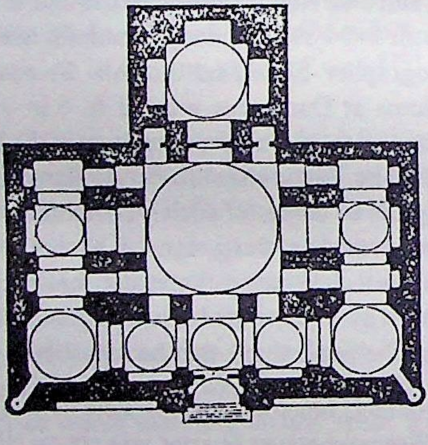
Ibn Jubair (1184) remarks, and his statement is repeated by Ibn Batutah (1326), "From whatever quarter you approach the city you see this dome, high above all else, as though suspended in the air." It was probably for the sake of its external effect that this form was devised, and came to be adopted elsewhere.[13]

After Timur's death in 1405 the double dome passed from Samarkand to Khurasan, over which it was spread by the Timurides then ruling at Herat. It appears in the mosque of Gawhar Shad at Meshed (1418) and later in the mosque and mausoleum built by Sultan Husein Mirza (1487-1506) at Herat. Dating midway between these two buildings is the Blue Mosque at Tabriz, built by Jahan Shah (1437-68), which

Texier states had a double dome according to Chardin and Tavernier, who visited it in the seventeenth century before it was wrecked by an earthquake.

There is about the plan of this mosque, however, something which Fergusson calls Byzantine. I cannot quite see this myself, although the three domes in a row in front for the dome chamber seem very unusual, and almost recall a Greek narthex. Should this plan, however, really show Byzantine influence, it is tempting to try to put its date forward a few years, so that it falls into the reign of Uzun Hasan, Jahan Shah's successor, in which case I could suggest an explanation. Whether this can be done I cannot say, as I am unable to find the ultimate authority on which the attribution of it to Jahan Shah rests. However, could it be attributed to his successor my explanation would be this.

6. Plan of Blue Mosque.



Uzun Hasan was Baiendari of the Ak-koinlu or White Sheep dynasty of Turcomans, and he defeated and killed Jahan Shah in 1468. Uzun Hasan, who ruled at Tabriz, married the daughter of Calo Johannes, one of the last Comneni emperors of Trebizond, which startling alliance was the outcome of the desire of the Christain princes of Europe to unite with the Persains against the growing power of the Turks, whose advance they were viewing with dismay. It is easy to conceive a Byzantine influence being introduced under such auspices, especially as the relations with the West were so close at this time that there was a Venetian ambassador, Caterino Zeno, at Uzun Hasan's court, at whose instance he invaded Asia Minor, but was defeated by Sultan Mohammad II.[14] Although

Plate 1 Sarvistan Palace

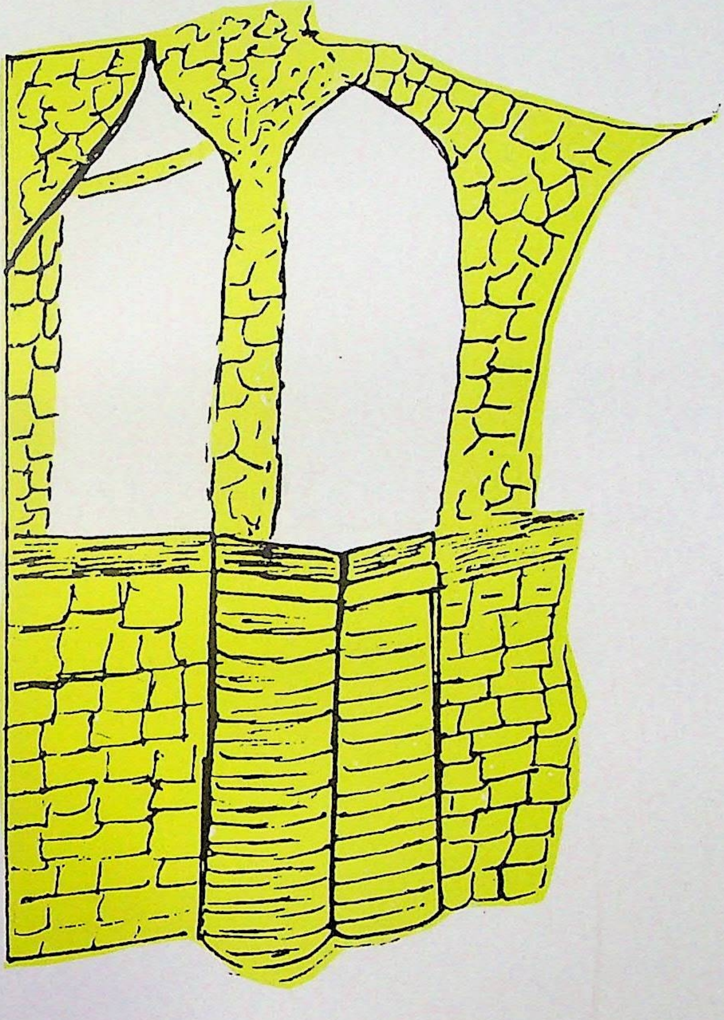


Plate 2 Sultan Sanjar at Meru

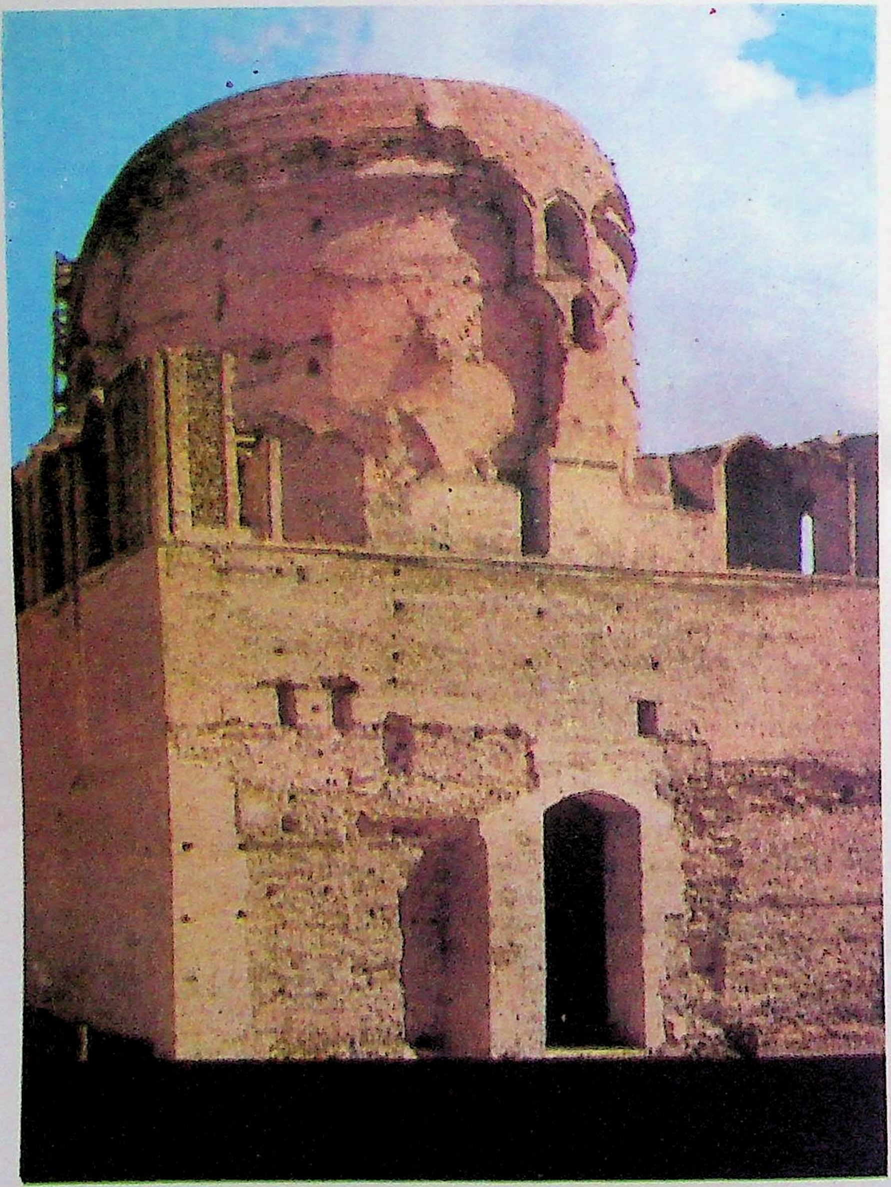


Plate 3 Bibi Khanum

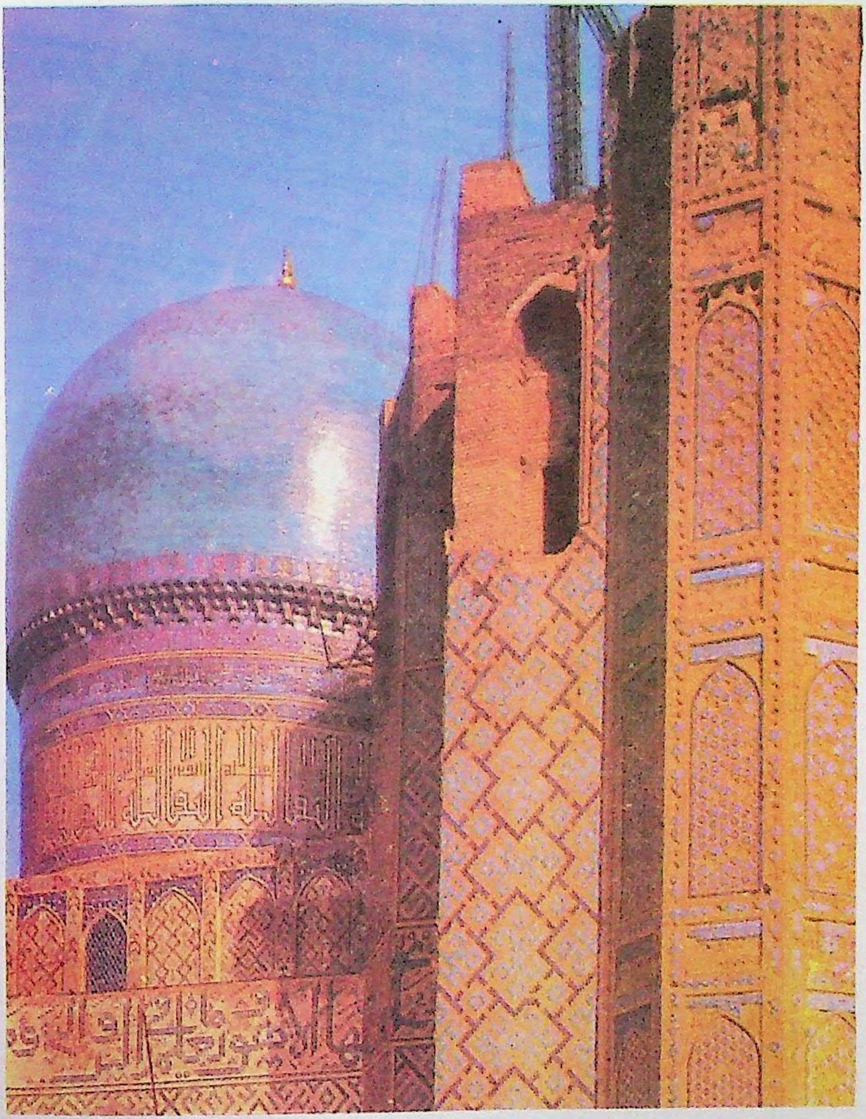


Plate 4 Gur-i-Amir

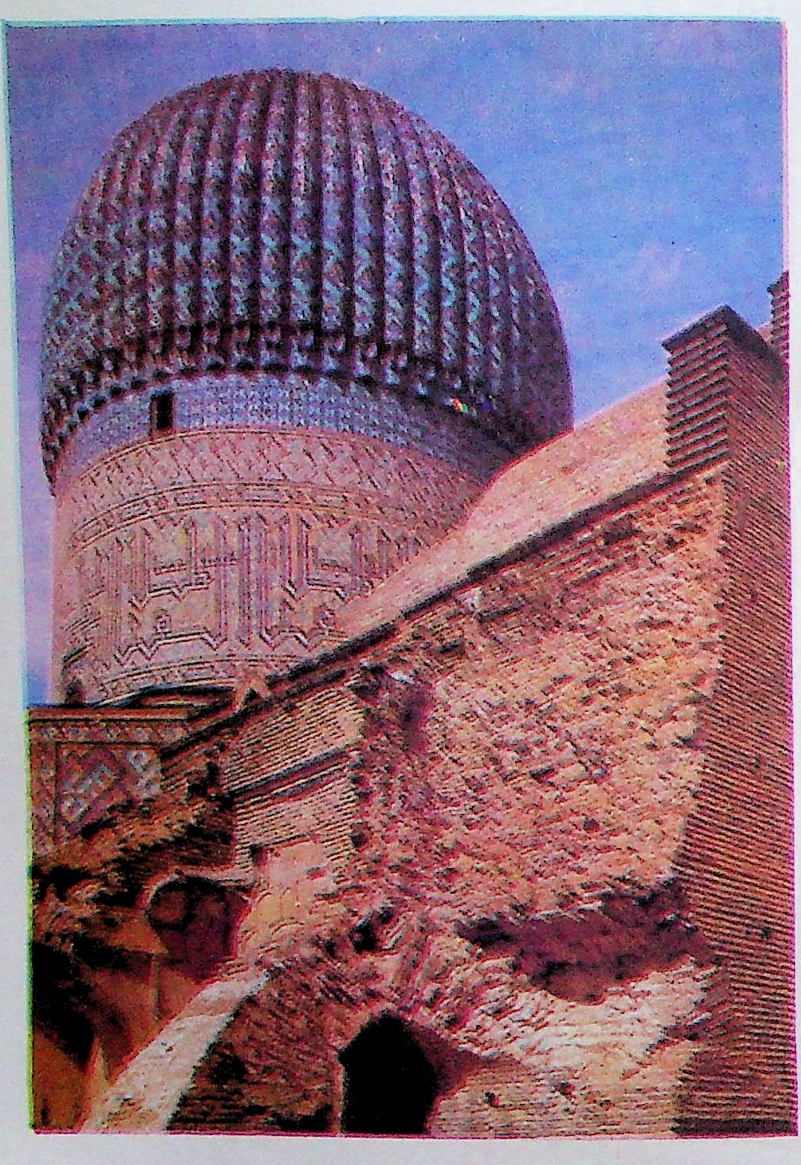


Plate 5 Royal Mosque built by Shah Abbas

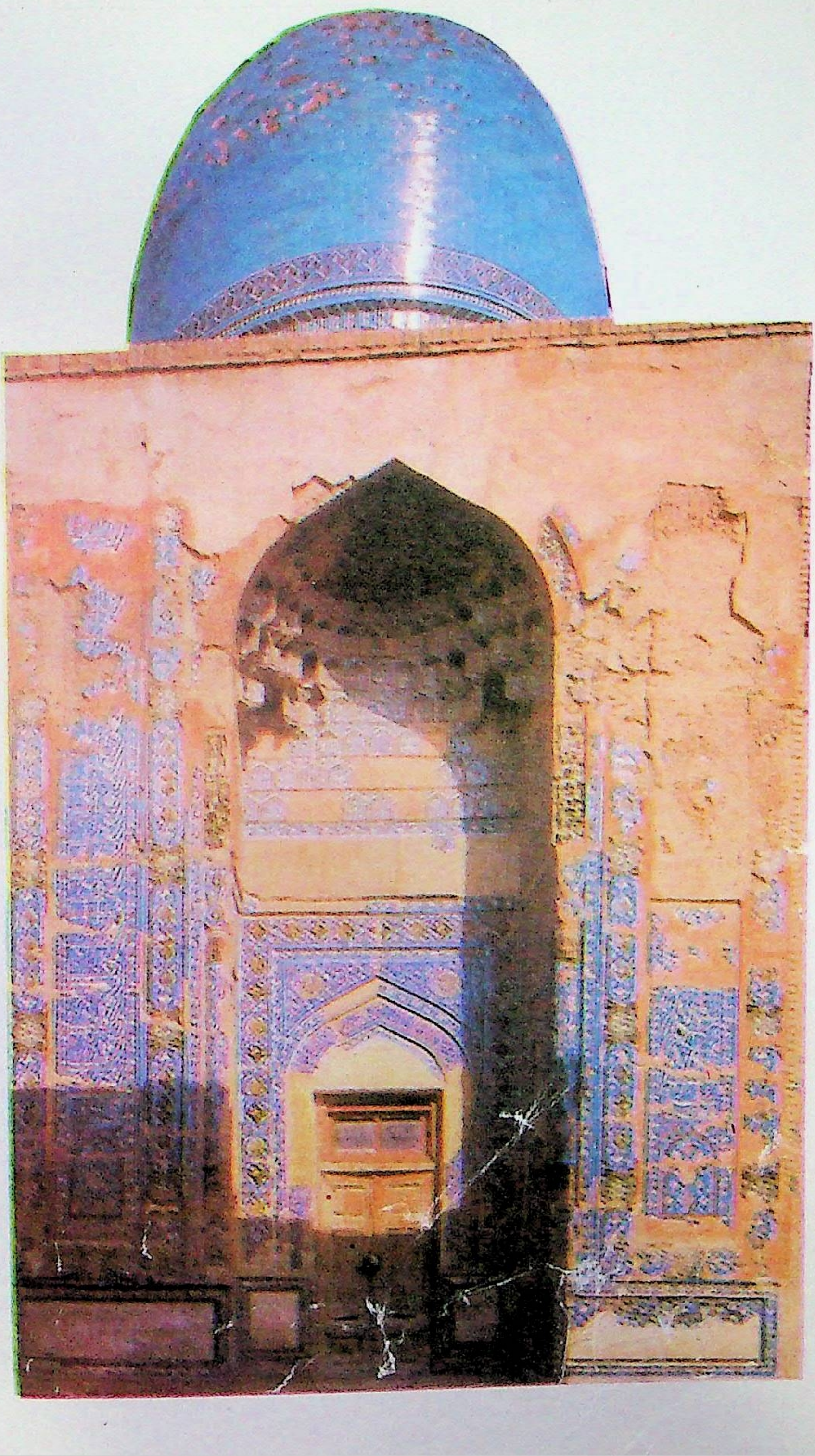
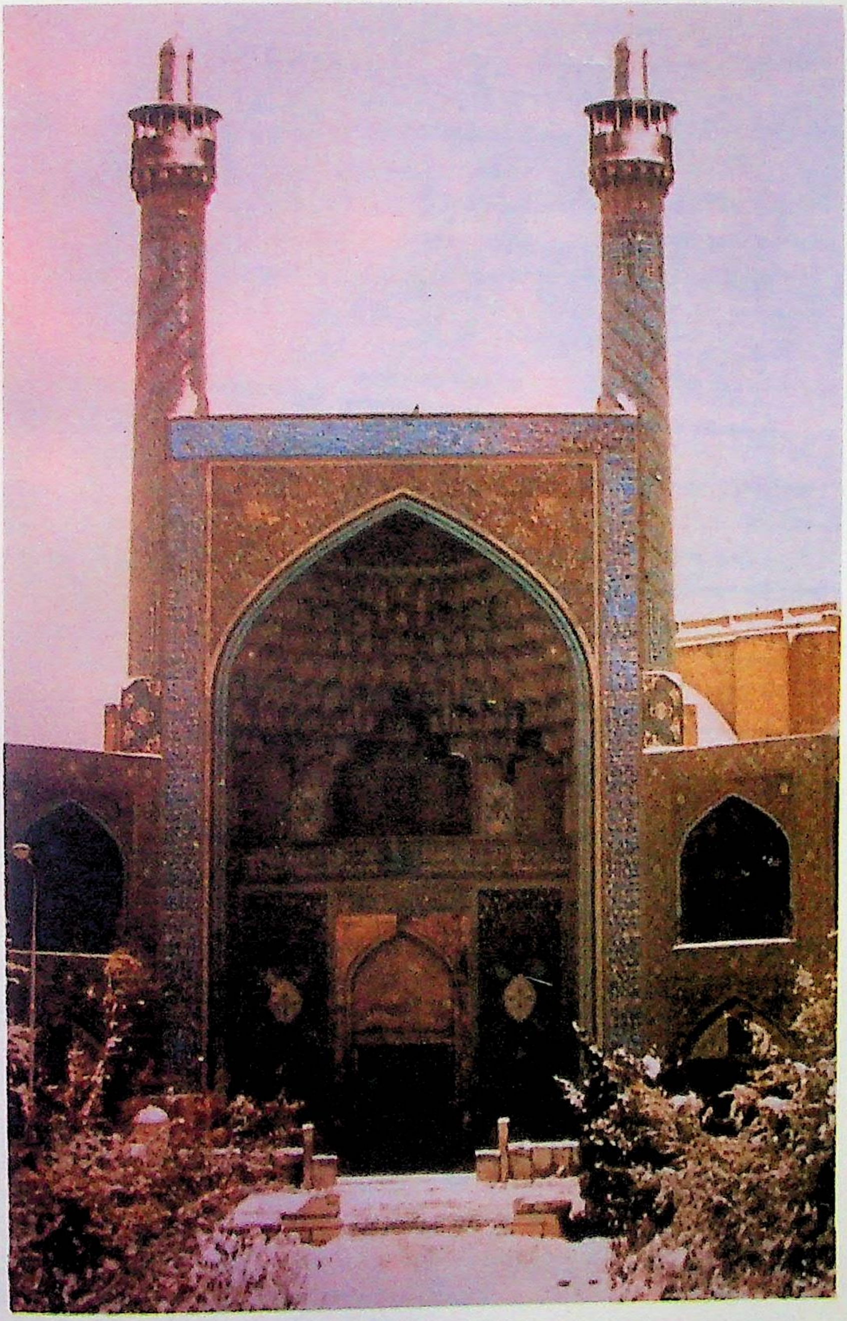


Plate 6 Madrasa Shah Hussein



I do not hold definite views as to the plan of the Blue Mosque, it nevertheless seems to me that there is here scope for interesting research.

In the sixteenth and seventeenth centuries we find the double dome with slightly swelling outline in general use for all important building, as, for instance, the dome of the Royal Mosque at Isfahan, built by Shah 'Abbas in 1612 (Plate, Fig.5). It is brilliant with glistening tilework, one of the most striking features of Persian domes, and has windows round its base.

Most important domes in Persia are covered with faience, but those belonging to sacred shrines are generally gilded, a practice which certainly goes back to 1674, when the dome of the shrine at Meshed was covered with gilt copper plates by Shah Suleiman.[15] I think that the previous dome was probably covered with blue tiles on account of the couplet "Samarkand is the face of the earth: Bokhara is the marrow of Islam: Were there not in Meshed an azure dome, the earth would be merely a ditch for ablution". According to Schuyler this couplet was probably written about 1500. This feature is found in the shrine of Fatima at Kum, and also in the tombs of Ali and Husein at Najaf and Kerbela. In the clear Persian atmosphere these gilded domes may sometimes be seen flashing 30 miles away. The Medresseh-i-shah Husein at Isfahan was built c. 1700 (Plate, Fig. 6). It is about this period that the outline of the double dome begins to get fuller, a tendency which increases rapidly after 1750.

The double dome spread to India, where it first appears in the mausoleum of Humayun, completed 1565. Humayun succeeded to the throne in 1530, but in 1539 was defeated at Kanauj by Sher Khan Sur, who eventually drove him out of India. He took refuge in Persia at the court of Shah Tahmasp, by whose aid he eventually recovered his kingdom from Sher Shah's successor, sixteen years later, in 1555. His stay all these years at the Persian court explains the form of the dome covering his tomb.

This building is said to have been the prototype of the Taj, which was commenced in 1632, i.e. about seventy years later. In Carr Stephen's *Archaelogy of Delhi* (to face p. 214) may be seen a photograph of the mausoleum of Khan Khanan, who died in 1626, i.e. only six years before the commencement of the Taj. It has a double dome, the distance between the crown of the inner and outer shell being 25 feet. This building, which has been ignored in this connexion by every writer, appears to me to be the real model on which the Taj was based. It resembles the Taj much more closely, its whole framework being more drawn together, and its dome is practically identical in shape. The kiosks at the corners too, as also the doorways, which are flush with the facade instead of being recessed, bear this out. .

To return to Persia, the double dome under eighteenth century decadence takes an increasingly bulbous form; in fact, as Saladin says, the greater the swelling the later the date at which it has been built. This swelling form culminates in the domes of the Shah Chiragh and the mosque of Jalal-ud-din at Shiraz, which may date from the time of Kerim Khan, but which are probably subsequent to the great earthquake of 1824, which according to J.E. Alexander (*Travels from India to England*, p. 125), who was there shortly afterwards, left "not a single dome or minaret standing".

This type followed exactly the same course in India during and after the reign of Aurangzib, the most pronounced and best-known example being, perhaps, the mausoleum of Safdar Jung at Delhi.

For present-day practice a good account may be found in Langenegger's *Die Baukunst des Iraq*. In fig. 129 he gives a section of a modern dome with double shell, the outer being one brick thick, covered with a layer of tiles. He expressly remarks that it could not stand without the tie-bars shown, which supports the view taken earlier in this paper as to this unscientific shape, contrary to the view urged by French writers on the subject. In fig. 132 he gives another section of more massive construction, in which the whole outer shell is supported on a trussed frame. In fig. 130 is an interesting example of modern jerry-building in which may be seen a thin shell built with light rods radiating from a centre. These rods project through it until it is finished, when they are cut off flush and concealed under the final coating of tiles; but I ought to add that Dr. Langenegger says that this style of thing is stronger than might, perhaps, be expected. As an example of the most extreme form taken by the double dome, I may cite the dome of the shrine of Imam el Horr at Kerbela, given by him in fig. 19.

To sum up, Persian domes may be divided into three groups:-

1. The pre-Mohammedan domes of elliptical shape, as seen at Firuzabad and Sarvistan.
2. The domes of the Mohammedan period down to 1400, which, gradually changing from the earlier type, become pointed, the dome at Sultanieh being the finest example.
3. The double dome introduced by Timur after his stay at Damascus, which though only of very slightly swelling outline for three centuries, gradually became fuller about 1700, a tendency which culminated in the course of the last hundred years, till it attained at Shiraz an extremely bulbous form.

Notes & References

1. Lethaby, *Architecture* (by permission of Messrs. Williams & Norgate).

2. R. Phene Spiers, *Architecture, East and West* (by permission of Mr. B.T.Batsford).

3. Fig. 1 is reproduced from Dieulafoy, *Art in Spain*, by permission of Mr. W.Heinemann.

4. It is certainly not safe to attribute it, on the strength of its name, to Firouz (A.D. 458-82), as has been done, as the name Firuzabad only dates from the tenth century, when it was given to the place by Asaded-Dowleh, one of the rulers of the Al-i-Buyah dynasty of Fars and Iraq (Curzon, *Persia*, ii, 228).

5. Fig. 2 is reproduced from Skrine & Ross, *Heart of Asia*, by permission of Messrs Methuen.

6. Illustrated Handbook of Architecture, pp. 441-3.

7. Journal Royal Institute of British Architects, 1871.

8. *Denkmaler persischer Baukunst*, fig. 65.

9. Figs. 3 and 4 are reproduced from Skrine & Ross, *Heart of Asia*, by permission of Messrs. Methuen.

10. *Manuel d'Art Musulman*, i, 360.

11. G. Le Strange, *Paslestine under the Moslems*, pp. 255-7.

12. *Die Baudenkmaler von Samarkand*, p. 28.

13. This theory may be found worked out in detail in an article which I contributed to the *Burlington Magazine*, November and December, 1913.

14. Sykes, *Ten Thousand Miles in Persia*, p. 65.

15. Its present coating, according to Khanikoff, is due to Nadir Shah.

MIHRAB[1]

R.B.Serjeant

The origin of the term *mihrab* is somewhat obscure. In Islam it is usually particularly applied to the prayer-niche, and the article in the *Encyclopaedia of Islam*[2] treats of it only as such, yet this technical usage of the word seems to be derived from a more primitive and general meaning, and on the balance of the evidence its emergence as a name for a part of the sanctuary appears to be Islamic only. *Mihrab* has been discussed by Noldeke,[3] by Horovitz,[4] and by Landberg.[5] It has been discussed in connexion with architectural studies by Creswell,[6] and by Sauvaget.[7] These studies cite a number of references and sources which I have re-examined, but do not propose to repeat in toto. Each of these authorities shows conclusively that the employment in the technical sense of prayer-niche is not early.

In our one sure early Arabic source, the Qur'an, the word occurs but five times (*Surahs*, III, 37,39;XIX,10; XXXVIII, 21; XXXIV, 13). Again there is no need to add to the commentary of former scholars, but it is significant that, in no case, is *mihrab* used to mean a prayer-niche. For the Prophet it evidently meant a covered place where people sat.

The *Taj al-'arus*[8] contains a full and important article on the subject of *mihrab* which it seems fitting to render into English almost in its entirety.

"The *mihrab* is the chamber (*ghurfah*)[9] and the high place." This al-Harawi transmitted in his *Gharib*,[10] on the authority of al-Asma`i.

Waddah of the Yaman said,[11]
"A mistress of a *mihrab* whom, when I go to her,
I do not meet until I ascend a flight of steps (*sullam*)".

The prominent place of the room (*sadr al-bait*) and noblest (*akram*) place in it. Al-Zajjaj said concerning the word of God,[12] "Did the news of the foe come to you when they scaled the *mihrab*?"[13] "The *mihrab*", he (al-Zajjaj) said, "is the highest room *(bait)* in the house *(dar)*, and the highest place in the mosque." "The *mihrab* here", he said, "is like the *ghurfah*."

Concerning the Tradition that the Prophet sent 'Urwah b. Mas'ud to a tribe *(qawm)* of his al-Ta'if, and he came to them, entered a *mihrab* of his, and at dawn looked down on them, then he performed the call to the prayer, he said, "This shows that it is the chamber *(ghurfah)* to which one ascends".

Abu 'Ubaidah said. "The *mihrab* is the highest place *(ashraf al-amakin)"*.

In the *Misbah*[14] (it runs), "It is the highest of places where one sits *(ashraf al-majalis)"*.

Al-Zuhri said, "The *mihrab* after (the usage of) the common people (*ind al-`ammah*) (in the sense in which) people understand it, is the station *(maqam)* of the Imam in the mosque."

Al-Anbari said, "The *mihrab* of the mosque was so named because the Imam is there by himself and removed from the people. Hence one says, `So and so became angry on account of (*haraba li-*) so and so', when there is distance and mutual hatred between them.... It is said that the *mihrab* is the place in which the king is by himself and far removed from the people."

In the *Lisan al-'Arab*[15] (it is stated that) "The *maharib* are the prominent parts of the places where people sit (*sudur al-majalis*). From this (is derived) the *mihrab* of the place where one sits (*Majlis*), and from this (also is derived) the *maharib* of Ghumdan[16] in the Yemen. The *mihrab* is the *qiblah*, and the *mihrab* of the mosque is also its prominent part and the highest place in it".

It is the Tradition of Anas that he used to dislike the *maharib* i.e. sitting in the prominent part of the place where people sit (*sadr al-majlis*) and being on a higher level than other people (*yataraffa' 'ala'l-nas*).

(Concerning) the word of God,[17] "And he came out to his people from the *mihrab"* they say (means), "from the mosque". The *mihrab* is the noblest of the places where kings sit (*akram majalis al-muluk*), according to Abu Hanifah.

Abu 'Ubaidah[18] said, "The *mihrab* is the Lord (*saiyid*) of places where one sits, and that which is set foremost (*muqaddam*), and the loftiest of them (*ashrafu-ha*)". "Thus it is", he said, "in relation to the mosques."

According to al-Asma'i, the Arabs call the castle (*qasr*) a *mihrab*, on account of its loftiness (*sharaf*), and he quoted,

"Or a statue (*dumyah*) decorating a *mihrab*,
Or a pearl sold to a merchant".

By the *mihrab* he meant the castle (qasr) and by *dumyah* an image (*surah*). Al-Asma'i related on the authority of Ibn 'Amr b. al-'Ala', "I entered one of the *maharib* of Himyar and the scent of musk blew upon my face". He meant a castle and the like.

Concerning the word of God,[19] "Of *mihrabs* and statues (*min maharib wa-tamathil*)" al-Farra' said, "He remarked that they were pictures (*suwar*) of the angels,[20] for angels were depicted (*tusuwwira*) in the *masjids* so that the people might see them and reflect the more".

Al-Zajjaj said, "It is the same thing, the *mihrab* in which one prays".

It is said that the *mihrab* was called a *mihrab* because the Imam, when he stands (*qama*) therein, is not safe from committing a solecism or an error.....

The *maharib* of the Banu Isra'il are their *masjids* in which they used to sit, as if it were for counsel in the matter of war. According to the *Tahdhib,*[21] "in which they used to congregate for the prayer and the like".

Similar to this is Ibn al-A'rabi's opinion, "The *mihrab* is the place where people sit (*majlis*) and congregate".'

A most significant opinion quoted is that of al-Zuhri (ob. A.D. 742) who flourished towards the end of the Umaiyad period. He places the *mihrab* at the *qiblah* end of the mosque, but does not identify it positively at least, with the *qiblah*. He defines it as the diction of the common folk with this sense, which might seem to indicate that it was developing a technical application at this period. The *mihrab* was a raised place where people sat, and it is associated with notions of honour. In this way it is related perhaps to the raised mud part of the reception room in a house I saw in Dali', known there as *diwan*, in San'a' as *liwan,*[22] but in Baihan as *hidah*. It might be added that the word *qasr* by which some of these early authorities define *mihrab*, means in Hadramawt a story of a *dar*,[23] but I do not suggest positively that it has been so used here.

The question at issue is, then, what exactly did a *mihrab* mean before Islam? That the word was derived from Ethiopic seems to me unlikely for, relative to Southern Arabia, Abyssinian culture would seem to be primitive and derivative. Salis Daiches has proposed to connect it with the Hebrew הֲרָבוֹת in the sense of castle, palace[24] and supports his argument from a number of Biblical citations. My colleague Mahmud al-Ghul has provided me with the data at present available for ancient Southern Arabia which I quote *in extenso*.

'The term *mhrb* occurs twice in known South Arabian inscriptions. It is not known for certain to what sort of structure or locality either might have belonged, because both were known only after having been removed to Aden.

The earlier known inscription, CIH, 106 (BM 55), seems to have originated from Kawkaban in the region of Hamdan, because the name of that locality is mentioned in the inscription which reads,

2. /br'
3. *w/whsqrn/mhrbn*
4. KWKBN/

2. (they laid the foundation of
3. and completed the *mihrab*
4. Kawkaban.

The reading of the word *mhrbn* is established beyond doubt. D.H.Muller, equating *mhrbn* with *mhrmn*, on the basis of the existence of a consonantal change, translated the word as "sanctuary". The editor of the *Corpus* preferred the translation "fortification" or "tower", pointing out that according to Hamdani's *Jazirah*[25] Kawkaban is described as a *qasr* "castellum". and as a *hisn* "arx". The editor therefore derives it from the root *haraba* "to fight", stating that the interpretation of the term as "fortress" suits the fortified Kawkaban well. This interpretation, in a way, seems to find support in the *Taj* (cf. quotation *Supra*).

The other inscription in which *mhrb* occurs is in the Kaiki Muncherjee collection. The reading of *mhrbhw* (R, 4108, 3) is partly restored. This inscription adds nothing to what CIH, 106, tells us. The fact that the second inscription was commissioned by someone of the rank of *muqtawi* of the king, *mqtwy* being a restored reading, may not be a sure indication of the size of the *mhrb* and of whether it was a fortification or something of a more private character.

Another term *thrbt* occurs in a number of inscriptions.[26] Mordtmann and Mittwoch here rejected the implication originally made in CIH, 357, 12, that the word has anything to do with war.[27] They conclude their discussion by saying. "The word (as Ryckmans also believes) ought hardly to have anything to do with war, but rather denotes a cult performance (ritual) or some object associated with the cult. One is reminded of the Islamic *mihrab*".

Having adduced the relevant sources to show that the word *mihrab* was known to pre-Islamic Arabia, and that it has not actually been proved to have any direct association with the cult, it is appropriate to introduce new evidence as to the sense of *mihrab* which seems to throw a rather different light on its original meaning.

The Hadrami mosque

In the course of conversation with my invaluable Hadrami informant, Shaikh 'Abdullah Rahaiyam Ba Fadl, certain strange terms he employed for the parts of a mosque attracted my attention. In answer to my further inquiries he sketched out roughly for me fig. 1, scribbling the words *surat masjid* over it. Though perhaps no single mosque is intended, Rahaiyam should have a very sound conceptual knowledge of a mosque plan for he has spent most of his life in and about mosques in Tarim and elsewhere. I have never met anyone so full of religious lore as this Shaikh.

At the top end of the plan is a covered hall, varying in size according to need, entirely closed in, but provided, of course, with roof, doors, and windows. This is called the *hammam* or *kanin*, or *al-makan al-kanin*, derived from the root *yakunn al-insan*, or *yiktann*, in the sense of 'to cover'.[28] The term *hammam* obviously comes from the sense of heating, for during the winter it can be bitterly cold in Hadramawt in the early morning and after dark, so much so, in fact, that one sometimes sees piles of palm-logs near a mosque used to heat the water for the ablution before the prayer. If *hammam* may not yet be discovered in the earlier sources such as al-Hamdani's *Jazirah*, it is at any rate found in *al-Jawhar al-shaffaf*[29] composed before the year 855/1451 where *hammams* are mentioned at *al-Shihr* with this special sense. *Al-Mashra' al-Rawi*[30] alludes to the foundation of a *hammam* in a Tarim mosque about 801/1398-9 in 917/1511-12. To the extent that *hammam* with this sense is not recorded by Lane, it does not seem to be known to the classical lexicons.

In front of the *hammam* is a covered area, a sort of portico known as the *maharib*, open on its other side to a court. A single *miharab* was stated by Rahaiyam to be a *saff haqq al-sawari*, a row of columns, along with the spaces in between each column, but it seems to be applied to the whole of this portion of the mosque. That this sense is not recent is confirmed by the hagiology of the Al Khatib Mashayikh,[31] a tenth/sixteenth century work which speaks of *al-'ud al-mansub fi akhir saff al-maharib* 'the beam set upon the last row of columns'. That the word

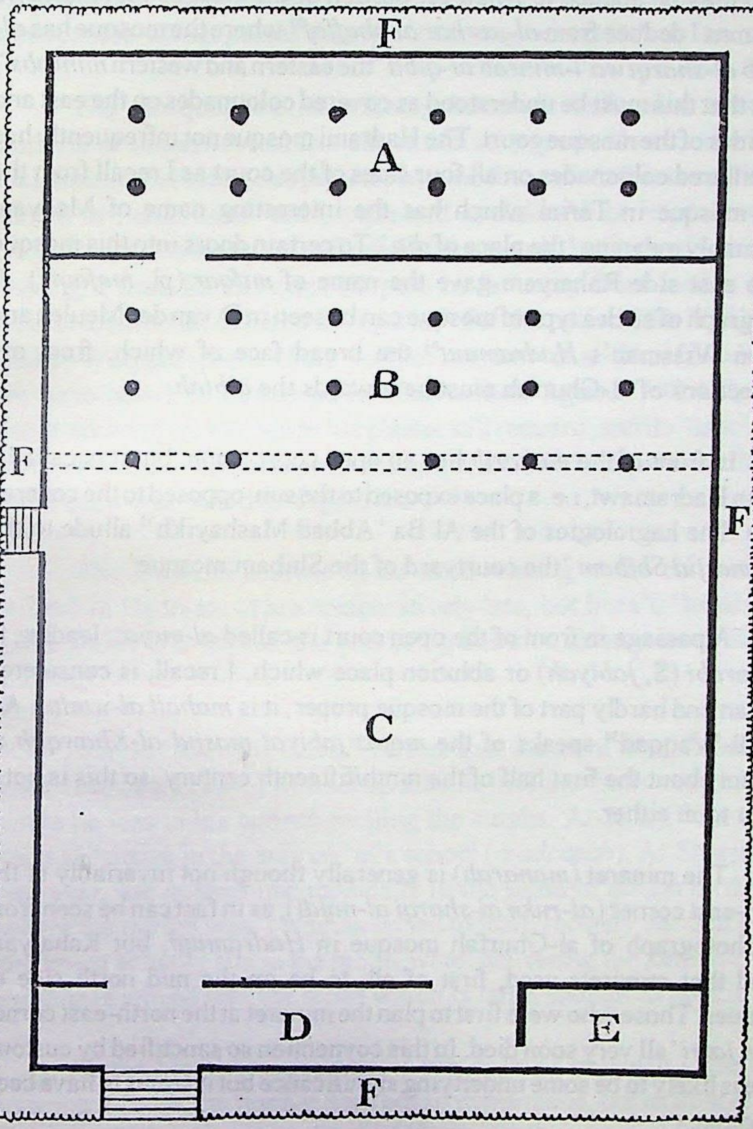


Fig. 1.—The Ḥaḍramī mosque. A, the *ḥammām* or *al-makān al-kanīn*, the covered hall; B, the *maḥārīb*, opening on to the court of the mosque; C, the *ḍāḥī* or *ṣaḥn*, the open court of the mosque; D, the *majāz* or passage; E, the *jawābī*, cisterns for ablutions; F, the *'uṣbī* or stone platform upon which the mosque is constructed.

N.B.—The minaret or minarets are not shown, but as the minaret is usually at the north-east corner nowadays it would be sited somewhere in the region of the area marked E. The *qiblah* would probably lie somewhere above the letter A. Ḥaḍramī mosques face only a little north of west, and for this reason the west is known as *al-qiblī*.

mihrab may be applied to whatever portion of the mosque that has rows of columns I deduce from *al-jawhar al-shaffaf*[32] where the mosque has *al-mihrab al-sharqi wa'l-mihrab al-qibli* 'the eastern and western *mihrabs*'. I think that this must be understood as covered colonnades on the east and west sides of the mosque court. The Hadrami mosque not infrequently has such pillared colonnades on all four sides of the court as I recall from the *jami'* mosque in Tarim which has the interesting name of Madyan, presumably meaning 'the place of *din*'. To certain doors into this mosque on the east side Rahaiyam gave the name of *mifqar* (pl. *mafaqir*). A photograph of such a type of mosque can be seen in D. van der Meulen and H. von Wissman's *Hadramaut*[33] the broad face of which, from my recollections of al-Ghurfah must lie towards the *qiblah*.

In front of the *maharib* lies an open court, *sahn*, but it is called a *dahi* in Hadramawt, i.e. a place exposed to the sun, opposed to the covered *kanin*. The hagiologies of the Al Ba 'Abbad Mashayikh[33] allude to the *dahi masjid Shibam* 'the courtyard of the Shibam mosque'.

A passage in front of the open court is called *al-majaz*, leading to the *jawabi* (S, *jabiyah*) or ablution place which, I recall, is considered unclean and hardly part of the mosque proper; it is *mahall al-wudu'*. Al-Iklil al-Waqqad[34] speaks of the *majaz jabiyat masjid al-Khawqah* at Shibam about the first half of the ninth/fifteenth century, so this is not a recent term either.

The minaret (*manarah*) is generally though not invariably at the north-east corner (*al-rukn al-sharqi al-najdi*), as in fact can be seen from the photograph of al-Ghurfah mosque in *Hadramaut*, but Rahaiyam stated that minarets used, first of all, to be on the mid north side of mosques. Those who were first to plan the minaret at the north-east corner of the *jami'* all very soon died. In this covnention so sanctified by custom, there is likely to be some underlying significance but it seems to have been forgotten.

On the western side of *jawami'* or mosques of assembly, and the *jabbanah* which is the mosque at a burial place,[35] there is usually a small door for the *salat al-id* and for the prayer over the dead. There is usually also a door for the *khatib* to enter without passing through the congregation. (It is interesting to remark that the prayer for rain (*al-istisqa'*) is held in the *misyal* or flood-bed, everywhere. In Tarim by custom it is held in the watercourse which passes through its three cemeteries).

The mosque, like an ordinary house, is built on a foundation platform of stones several feet above ordinary ground level; on one side, sometimes on all sides, this projects beyond the walls to form a sort of bank known in Tarim as *al-'usbi,* explained as *dakkahh* or *ruqdah tawilah. Dakkah* is the common word for this step or bank, and indeed I remember hearing it used for the same purpose as far away from Arabia as in a district town south of Kano in Nigeria.[36] For the period 834-7/1430-4 al-Iklil al-Waqqad speaks of the *'usbi* of the *jami'* at al-Ghurfah which, as we have noted, is illustrated in *Hadramaut.* Again 839/1435, *wa-ad nurat-uh baqiyah wa-l-usbi* 'its plaster still remains, and its 'usbi'. At the tomb of Shaikh 'Uthman near Aden the mansab informed me that this same bank was called *al-baghalah.*

The Hadrami sources so far cited relating to the curious use of *mihrab* in Hadramawt are comparatively late, but Imra'u 'l-Qais refers to the *maharib al-aqwal,* the *qais* being South Arabian princes as is well known.[37]

Saiyid 'Alawi b. Tahir[38] relates that the saint Shaikh Salim (Ba Fadl) (ob. 581/1185-6) who set up schools in Hajar was wrongfully slain while he was in his *mihrab* reciting the surahs. Al-Sharji[39] speaks of a saint as 'sitting in the *mihrab'* of a school (*madrasah*). Al-Sharji[40] does, however, use *mihrab* unequivocally in the sense of *qiblah* or the place where the *qiblah* was. I was surprised to learn recently too that in Aden the Imam actually sits in the niche, when delivering the *khutbah,* for the *minbar* is moved into the niche which is large enough to hold it.

In the Mombasa mosques, in two or three of which I attended an evening *darsah*, the teacher does not sit in the niche, but in front of it, and the rest of those attending the *darsah* are mostly arranged facing him. It is interesting too, that at Malindi in Kenya, offerings (*nadhirah*) of incense are made at the *qiblah* niche. This so persists that in the ruined *qiblahs* of Gedi which he has excavated, James Kirkman showed me offerings of this sort newly made as a form of *sadaqah.* It seems that the word *mihrab* is hardly known here, and indeed it is apparently not really used in spoken Swahili at all or by the Arabic speakers of the coast, though the word being a cult term naturally figures in the Swahili dictionaries. This, I think, is only to be explained by the fact that the Arabic vocabulary of Swahili and of the Muslim cult are directly derived from the Shafi'i Arabs of Hadramawt and, perhaps to a lesser extent, of the Yemen, who may have commonly used the *mihrab* for something not directly identical with the *qiblah*.

There are more than a few references to the *mihrab* in the early Islamic period which demonstrate that it was not applied to a niche but to something much larger. At Damascus in the Great Mosque the portion known as the '*Mihrab* of the Companions of the Prophet' may have been an area rather than a wall.[41] Al-Kindi[42] speaks of the *qiblah* of the mosque as a place where prayer was made, and this might imply that the latter term too meant more than a niche at first. Ibn 'Abd al-Hakam[43] speaks of a person before 89/707 who *raka'a fi 'l-mihrab* 'made the prostrations in the *mihrab*', and Ibn Qalanisi[44] refers to *mihrab al-musalla* and uses *maharibah* in a way which implies that they were not prayer-niches, but a part of the mosque in which number of people could stand and pray. Yet again there are early references to *mihrabs* of David and other prophets at Jerusalem giving the impression that they were some sort of chapel.[45]

A tradition on the authority of Suyuti is quoted by Lammens,[46] which has been taken rather uncritically by those who have used it. *Ittaqu hadhihi 'l-madhabih, ya'ni 'l-maharib* 'disassociate yourselves from[47] these *madhbahs* (lit. places of slaughter), meaning *mihrabs*'. It has previously been suggested by certain scholars that it was forbidden to use the *mihrab* (which they understand in the sense of a prayer-niche) because it was linked with the Christian cult. However there is a clue to the sense of this Tradition in the Taj,[48] 'The *madhbahs* are *maharib*, so called because of the sacrifices (qarabin); and the *madhbahs* are the chancels (*maqasir*) in the churches, the plural of *maqsurah*, and it is said they are the *maharib* and the *madhabih*'. To understand *mihrab* in the sense of a *maqsurah* or chancel throws a very different light on the prohibiton.

The Muslim tradition account of the evolution of the *maqsurah* is well known; nor does it seems to me that one need necessarily look for analogies in the Christian churches of Syria. There seems no doubt that the Prophet prayed at the qiblah end of the covered area in the primitive mosque at Medina, that is to say that he must have prayed amongst the columns that supported its roof. Thereby the position of the Imam at the prayer was established. There would be no difficulty in placing some sort of grille or barrier to link these columns together, thus forming a *maqsurah*. Even so slight an alteration, so trifling an innovation made by the Caliph would attract the opposition of the meticulous Arabian coservatism which has to be experienced to be realized. So, in this Tradition, I see, not an attack upon the *mihrab* in its (later) sense as a prayer-niche, but as applied to the *maqsurah* introduced by Muy'awiyah at Damascus. The Tradition is anti-Umaiyad in so far as the *maqsurah* happended to be an innovation of Mu'awiyah, surely the most 'demoratic' of rulers, but it is really an expression of intense conservation. Although it is an ancient Arabian word, it is not without relevance that *mihrab* does not appear in Wensinck's index[49] to Tradition, and from this the deduction can be made that it had no significance for the cult. It may have been only a technical term in the vocabulary of architecture.

Ibn Qais al-Ruqaiyat,[50] in a verse addressed to the Umaiyad Caliph 'Abd al-Malik b. Marwan, speaks of a ruined castle *(dar)* being deserted 'as the *maharib* of vanished peoples *(ka-ma aqwat maharib darisi 'l-umami)'*. This is perhaps a cliche of his style for it occurs a second time in his *Diwan*.[51] The commentary runs, 'The *maharib* are *masajid* (places of prostration) made of graven stone *(hijarah manqurah)* and raised above ground level *(al-ard)*, and therefore they endure, and they are the *nasa'ib*'. The Taj[52] states that the *nasa'ib* are stones *(hijrah)* set up *(tunsab)* around the Ka'bah, at which *labbaika* was said *(yuhallu 'alai-ha)*, and where sacrifice was made (yudhbah). Another definition given is that they are 'stones set up about a watering-trough *(hawl hawd)*, the spaces between which are stopped up by kneaded mud brick *(madarah ma'junah)'*. This kind of structure is common in Arabia. From the commentary it will readily be perceived that *mihrab* in the sense of *nasa'ib* comes very close to the Hadrami usage. A *nusbah*, of course, also means a *sariyah* or column.

The association of sacrifice with the *mihrab* is reminiscent of the sacrifice at, or to pillars or stones. This also forms a part of the ancient ritual of the hunt which has survived to the present day in Hadramawt and which will be described at greater length in a forthcoming study of this subject.

A persistent poetical image is that of the statue in the *mihrab*, seemingly a cliche of poetic diction universally common to Arabia. Apart from the quotation from the Taj *(supra)*, there is al-A'sha's, *dumyat-un fi mihrabi Tadmura* 'a statue (or image) in the *mihrab* of *Tadmur*'. 'Umar b. Abi Rabi'ah says,

Dumyat-un 'inda rahib-in dhi 'jtihad-in
Sawwaru-ha fi janibi 'l-mihrabi
'An image at (the place of) an industrious monk,
Which they fashioned (drew) on the side of the *mihrab*'.[53]

I prefer to regard all meanings here as secondary to the basic sense of *mihrab* as a row of columns with their intervening spaces. From this basic sense one might render *mihrab* as 'niche', but more likely as the side of the monk's cell, or the side of the chancel, i.e. a wall linking columns, or simply understand the verse as referring to columns with statues set up between them. This type of decoration was a common enough artistic convention in pre-Islamic Southern Arabia itself as we know from the Hombrechtikon plaque published by Professor Honeyman, the provenance of which seems to be the Ma'rib region.[54]

That the *dumyah* was an image rather than a picture, can be demonstrated from the verse of 'Adi b. Zaid[55] *ka-duma 'l-'aji fi'l-maharibi* 'like statues of ivory in the *maharib*'. To revert to Tadmur too, it is of course rich in rows of columns, whether in its arccades or the imposing portico of the Sun Temple itself.

Landberg[56] quotes a verse from the Diwan of Qais b. al-Khatim which describes the Jews as having brought spices and perfumes to '*un magasin a coupole, tout pres du ciel*, dans son *mihrab*, ila *kubbat-in duwaina 'l-sama'-i bi-mihrabi-ha*'. This I should prefer to render as, 'a tent with its *mihrab*'. The Bedouin tent can in fact be said to be dome-like, as may conveniently be ascertained from Colonel Dickson's drawings[57]; the shape of tent that he illustrates may be found as far south as Baihan. The *mihrab* of Qais al-Khatim I should understand to be the open side of the tent with its row of tent poles. One would then think of the articles of merchandise spread out in front of the tent, and hence ila is used to express their position, while the owner of the goods sits in the shade actually inside the tent.

Landberg has also discussed Rhodokanakis's proposal to link *mihrab* with *harbah* 'a spear'. However I cannot feel that *mihrab* is connected directly with the Prophet's custom of using a spear as a *sutrah*, recorded in Traditions quoted by al-Bukhari and others. It may be that the spear was used in open country to ascertain times or direction by the sun, for one certainly speaks to-day of the sun as having risen *qadr rumh* 'a spear's length'. On the other hand in Muhammad's practice there may be retained the vestige of the cult which sacrified at columns and standing stones, purified from any significance by Islam. To link *mihrab* with *harbah* is attractive in a different way, for *saḥm* 'an arrow' is still used to mean 'a column' in Hadramawt. Certainlly the long low Bedouin tent suspended on a series of poles is not so very remote from a row of spears.

While I do not dispute the suggestions made by Mahmud al-Ghul,[58] perhaps the pre-Islamic *thrbt (supra)* is derived from the *taf'ilah* form of the root *hrb* and would have the fundamental sense of setting up a *mihrab* or row of *harbahs*. Subsequently it might be applied to the row of pillars or the structure in which they were used. Professor Beeston suggests, however, that the word might equally well have the form *tihrabah*.[59] Possibly, too, there may be an etymological relationship with the word *rahbah* applied to the court of a mosque[60] or house.

Mihrab and *qiblah*

It remains to suggest a process by which the *mihrab* became associated with the prayer-niche.

Mihrab evidently can mean a pillard sitting-place, open at one side, set at some eminence above ordinary ground level. Where it is actually described as lofty, I am inclined to think it equivalent to the type of pillard portico so common in the large Hadrami house, set on an upper story, or on the roof, forming one side of a little court. This is a structure with which all visitors to the country must be thoroughly familiar. An example can be seen in the late Sultan 'Ali's palace at al-Qatn, though this is perhaps not the most characteristic.[61]

Landberg compares the *mihrab* with the *liwan* of Damascus, and in Palmyra, a good few years ago now, I sat in just such a *liwan* in a Bedouin house often enough, but it was not pillard. The ancient verse[62] supports this view,

Ka-'aqilati 'l-durri 'stada'a bi-ha
Mihraba 'arshi 'azizi-ha 'l-'ujma
'She is like the choicest of pearls wherewith
the Persians light up the arch of the throne of the King'.
One is immediately reminded of Ctesiphon.

The ordinary Arabian, however, cannot afford to spend much on building construction, and in place of such luxury as a *mihrab-liwan,* is content usually to sit in the shade of his house, and spend the evening on his *dakkah*. The *maharib* of the palaces of the ancient Arabian aristocracy may well be in allusion to the belvederes and porticoes with which the roofs of their castles were crowned. So when Ibn Hisham and Abu Nuwas[63] speak of the musk of the *maharib* of *San'a*'[64] the reception roofs and porticoes would be intended. Ibn al-Mujawir[65] quotes Ibn Duraid,

Wa-'htalla min Ghumdan mihraba 'l-duma'i
'In Ghumdan (castle) he came to the *mihrab* of the statues'.

The verse is hardly to be interpreted literally as I have rendered it. The *mihrab al-duma'* is doubtless the place where the women, all of them, by convention, lovely, are to be found. Their part of the house in palaces of aristocratic families is very often on the top floor, with access to their own part of the roof which has no doubt its own *mihrabs*. The reference to musk could be an indirect allusion to the women, for it is curious how often *mihrab* is mentioned with perfumes. It is possible also, if perhaps less likely, that the allusion is to the Yemenite fondness for perfumes and incense. On the roofs and other parts of the house, incense braziers are often seen casually set down.

Rathjens and von Wissmann[66] show a reconstruction of the Hugga temple in the Upper Yemen (fig. 2). It consists of a court, surrounded on all sides by pillard arcades, with a hall in the same relative position, more or less, as the Hadrami *hammam*. In front of this pre-Islamic *hammam* is

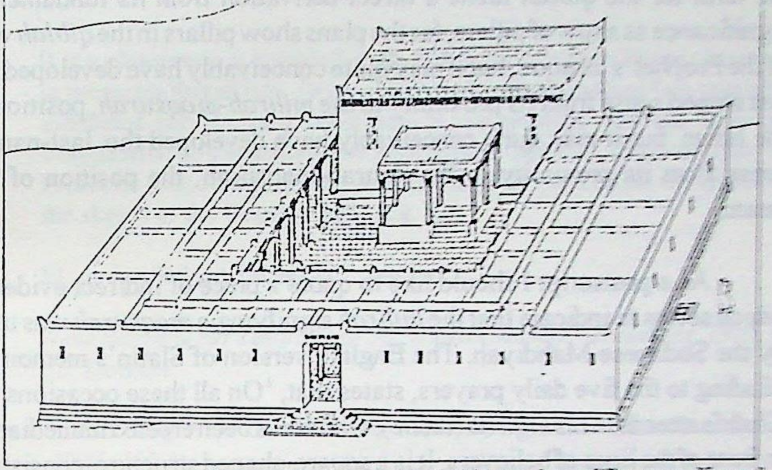


FIG. 2.—The temple at Hugga in the Yemen after Rathjens and von Wissmann. No roof drainage is shown, but probably gutter-spouts (*mizrāb*) should be supplied.

a pillared portico raised a little above the court, whence it is approached by a flight of steps. This accords quite well with the description from which 'Urwah b. Mas'udis said, in the passage cited from the Taj (*supra*), to have performed the *adhan*.

It will be perceived that the plan of the Hugga temple, that of the Prophet's mosque at Medina,[67] and the plans of the early Islamic mosques shown by Sauvaget[68] are basically identical with that of the traditional Hadrami mosque, namely a court with a pillard portion for prayer on the *qiblah* side. These may again be compard with the plan of the Great Mosque *(al-Jami' al-Kabir)* of San'a', known to have been built at the time of the Prophet.[69]

In summary conclusion it is proposed that the original sense of *mihrab* is a row of columns, that even before Islam it had come to be applied to structures consisting of rows of columns, invariably, of course, erected upon a plinth. As a feature of castles and palaces it came to be appled tropically to them. It is suggested that during the Umaiyad period, while retaining its other senses, it was the name given to the *maqsurah* which was situated in the plane immediately in front of the *qiblah* wall, but *mihrab* had probably already something of the idea of a *maqsurah* about it before them. I feel inclined to see in its ultimate develpment into

17. Qur'an XIX, 10.

18. cf. Brockelmann, *GAL*, I, 103. Abu 'Ubaidah was born in 110/728.

19. Qur'an XXXIV, 13..These were provided for Solomon along with *jifan* like cisterns (*jabiyah*), and cooking pots. The decorated *mihrabs* were then probably places where guests were entertained. In view of recent archaeological discoveries in Southern Arabia it is interesting to find the commentators state that Solomon's throne was set on two lions while two eagles (*nasr*) were above it.

20. An angel's head in marble discovered in Husn al-Ranad in Tarim has been embodied in the new castle built on that site.

21. Of al-Azhari, ob. A.H. 270.

22. C. Rathjens and S.D.Goitein, *Jewish domestic architecture in San'a,* Yemen, Jerusalem, 1957, 73. See also p. 451 *infra.*

23. 'Building and builders in Hadramawt', *Le Museon*, LXII, 1949, 284, Perhaps in Ibn al-Mujawir, *Tarikh al-Mustabsir*, ed. O. Lofgren, Leiden, 1951-4, Ii 181, there is an echo of this sense of *qasr*.

24. 'The meaning of ', *Jewish Quarterly Review*, XX, 1908, 637-9.

25. *Sifat jazirat al-'Arab*, ed. D.H.Muller, Leiden, 1884-91, I, 107, 195.

26. cf. J.H.Mordtmann and E.Mittwoch, *Sabaische Inschriften,* Hamburg, 1931, 221-3.

27. cf. R, 4632, where M.Hofner renders it 'Kampfszene'. Mahmud al-Ghul has supplied me with the following additional material on *thrb*.
CIH, 537, 10-2, reads:
10. /lhmdhw/bhr
11. 'yt/hr'y/lhm
12. w/bthrbn
Mordtmann and Mittwoch translate: 'and in gratitude to him for the vision which he showed them in?'. With this inscription they compare two more in which offerings of thanksgivings for vision are made. In one case the vison was shown or revealed in bN'MN/W'LM, two temples of 'TTR; in the other 'bmhrmn/d'WM, in the temple of 'Awwam'. On all of this they comment: 'In all three cases it has to do with Incubationsorakel, vision during retreat'. One more inscription mentions revelation of a vision to be compared with these, RES, 3929, 5, which reads: hgn/khr'yhw/

bsnthw/, to be translated, 'In accordance with what he showed him in his slumber'. With *snt* compare Arabic *sinah* 'slumber', as in Qur'an II, 255, *la ta'khudhuhu sinat-un wa-la nawm-un.*

So from these inscriptions we perceive that visions were revealed in temples during sleep, and in *thrb*. I do not think that *thrb* in CIH, 357, 12, should be equated either with a temple or with slumber, but that it is another aspect or circumstance associated with the ritual or manner of seeing visions.

With this form of *Incubationsorakel* one can compare two practices in Islam; the *salat al-istikharah* and *al-i'tikaf fi 'l-masjid*. In the former a person seeking God's help through a revelation of His will to indicate a correct decision he should make, would, according to `unorthodox' practices, perform a special prayer, and then go to sleep in full ritual purity of person and place-which would sometimes be in the mosque itself, hoping a vision would reveal to him, while slumbering, what he sought to know. (Cf. EI, art. *`Istikharah'*.) In *i`tikaf* the worshipper retires for the last ten days of Ramadan into the premise of the mosque, laying on himself regorous rules of abstinence. The retreat is closely related to the watching of *Lailat al-Qadr* which is supposed to fall sometimes during these last ten days of that month. It is possible to equate *thrbn* as a practice with *i`tikaf*. Linguistic support can be found in the statement that the *mihrab al-masjid* is so called because the Imam is alone in it, and that the *mihrab* is the place where the king is alone (cf. *Taj, supra*). This sense of retreat or isolation compares exactly with *mihrab* in Qur`an III, 37.39, and XIX, 11. I take *thrbn* here, if it is understood as an act, as the verbal noun of form V. As such it could be denominative, in the sense of performing something in, or to do with, a *mihrab*. In this connexion it may be recalled that Arabic *mihrab* can apply to a tent (Lane), and that the Prophet performed his *i`tikaf* in a tent within the mosque. If, however, *thrbn* is to be taken as denoting a place, then it is possibly a *tif`al* like Arabic *timthal* as Professor Beeston suggests, cf. SA *tqr* `dressed stones', possibly for *tinqar* (root *nqr*). As a substantive *thrb* could possibly have meant `place of retirement', in this case either a cell in the temple, or, quite probably, a tent or some other *ad hoc* building. Another form *thrbt* seems probably to have been some sort of structure. Gl., 738 (RES, 4632) was discovered built into the wall of an irrigation kiosk. Over it was a sculpture representing a man with an axe in his right had and a shield in his left, with two alert dogs on both sides. The text reads:

1. MRTDM/wbnh/RTDM/bny
2. (d) YHRHB/smw/thrbt
3. (n/)lwfyhm/

Maria Hofner translates:

1. MRTDM and his son RTDM, of the clan
2. YHRHB, have erected this fighting scene
3. for their safety

Dr. Hofner holds that the word *thrbt* is explained by the relief sculpture and that the dogs represent enemies, but I suggest that if the irrigation kiosk into which the inscription was built is a structure of antiquity, and if the inscription is a part of the original structure, the *thrbt* refers to the kiosk itself. The word would then bear the sense of 'chamber' or 'kiosk', possibly for observation. This may be further corroborated by RES, 3512, an inscription unfortunately badly damaged. It is on a libation altar in the British Museum, and it seems to have been offered as an act of thanksgiving for the building of a *thrb*. Line 3 reads: /d' m'dm/bmwqr/dthrbhn/btlm/ 'of fresh fruits (or dates) for the offering (or perhaps the meal, feast) for the kiosk of stone'. ('m'dm, cf. Arabic ma'd 'tender vegetables, fresh fruits or dates'; mwqr, cf. Arabic *wakrah, wakirah* 'food, a meal, given or made on the occasion of finishing a building', verb *wakara; tlm,* cf. Arabic *salimah*, pls. *silam* and *salim*, 'a stone', in the dialect of Himyar. As for the interchange between s and t it is sufficient to indicate that this inscription is in Hadrami, a dialect which is known for the changing of s into t.) (M.G.)

28. Mahmud al-Ghul has drawn my attention to the following passage from the *Taj al-'arus*, older edit, X, p.323:

29. Photocopy in SOAS, part II, tale no. 407.

30. Muh. b. Abi Bakr *al-Shilli, al-Mashra' al-Rawi*, Cair, A.H. 1319, I, 141. *Al-Mashra' al-Rawi, op. cit.*, I, 136-7, discusses the construction of the Masjid Al Ba 'Alawi formerly known as the Masjid Bani Ahmad at Tarim by the famous Saiyid Muhammad b. 'Ali Khali' Qasam. It was built of good clay from Bait Jubair, the unbaked clay brick (*libn*) transported to Tarim on the engine known as *al-jaradim*, 'which is an engine set on wheels (a *'jal*) drawn by oxen and mules, it also being called *al-'arabah'*. It was rebuilt by 'Umar al-Mihdar in 801/1398-9, and a minaret added in local style, not like those of the Holy Cities which are after Turkish style. Then he built for it a *mahall kanin*, 'for prayer in the winter days' adjacent to it on the east side, 'and it was made a *waqf* as a mosque known to them as a *hammam'*. 'On account of its being a *kanin*, cisterns (*birak*) were made near by it in which water is heated; they call it a *hammam* because the *hammam* is derived from *hamim*, i.e. "hot water", for it is not the Persian (*'ajami) hammam* concerning prayer in which the prohibition has come down to us.' The author then cites two Traditions on this subject. This passage is not very explicit as to the location of the *kanin* but it looks

as if it was built on the side opposite the *qiblah*, perhaps added to the front of the mosque.

31. 'Materials for South Arabian history', *BSOAS*, XII, 2, 1950, 305.

32. *op. cit.*, tale no. 328.

33. *Hadramaut*, Leiden, 1932, opp. p. 192.

34. *Al-Iklil al-waqqad*, cf. 'Materials for South Arabian history, II', *BSOAS*, XIII, 3 1950, 589. It was able to examine copies of this work in Huraidah and in Saiwun in 1954.

35. Discussed in 'The cemeteries of Tarim', *Le Museon*, LXII, 1949, 158.

36. *Dakkah* is discussed in 'A Judeo-Arab house-deed from Habban', *JRAS*, 1953, p. 129. *Al-sharji, Tabaqat al-khawass*, Cairo, 1903, 77, refers to the *dakkah* of a house.

37. W.M.de Slane, *Le Diwan D' Amro l'-Khais*, Paris, 1837, P.52/33

38. *'Uqud al-almas*, Singapore, 1949- ,II, 75.

39. *op. cit.*, 108.

40. *op. cit.*, 154.

41. E.M. Quatremere, *Histoire des sultans mamelukes*, Paris, 1837, II, appendix, p,282 seq.; cf. ibid., I, 164, citing a text referring to the Umaiyad Mosque mentioning a '*mihrab* avec (*fi-hi*) trois *maksurah*'. Quatremere quotes several references to *mihrabs* in the Damascus mosque which seem to show that the *maqsurah* contained or abutted on to a *mihrab*. Perhaps the phrase quoted means that the *mihrab* was so large that there were several *maqsurahs* in front of it. For this study the material he quotes is, however, rather late, except in so far as it seems to suggest that the name *mihrab* may have been particularized from the whole *maqsurah* to the *qiblah* in front of it.

42. *The governors and judges of Egypt*, ed. A.R. Guest, London, 1912, p.62.

43. *The History of the conquest of Egypt*, ed. C.C.Torrery, New Haven, 1922, p.238.

44. Ed. H.F.Amedroz, *History of Damascus*, Leiden, 1908, 9.

45. Tabari, *Tarikh*, ed. M.J.de Goeje, etc., Leiden, 1879-1901, I, 2408. Ibn Hawqal, *Viae et regna*..., ed. M.J. de Goeje. Leiden, 1873, 112 seq.

46. H.Lammens. 'Ziad ibn Abihi', *Rivista degli Studi Orientali*, IV, 1911-12, 246.

47. Here I have rendered *ittaqu* following my theory that it is not always to be derived from the root but often from the root and that it means as it would in tribal law in South Arabia to-day, to purify or absolve oneself from. I think it will be conceded that this gives a better sense here.

48. *Taj al 'arus*. older edition, I, 759.

49. A.J.Wensinck, *Concordance de la Tradition musulmane*, Leiden, 1936-

50. N.Rhodokanakis, *Der Diwan des 'Ubaid-allah ibn Kais ar-Rukajjat* (Sitzungsberichte der Kais. Akademie der Wissenschaften in Wien. Philos-hist. Kl., CXLIV(, Wien, 1902, 74.

51. *ibid.*, 222.

52. *Taj al-'arus*, op. cit., I, 486.

53. Al-Mubarrad, *al-Kamil*, ed. Ahmad Muh. Shakir, Cairo, 1937-56, II 607. The phrase 'on the side of' is susceptible of more than one interpretation; cf. W.Wright's edition, 378.

54. 'The Hombrechtikon plaque', *Iraq*, XVI, 1, 1954, 23-8. May this plaque perhaps represent a hierodule dancing at some religious ceremony, and a male devotee who has stripped himself naked in his ecstasy?

55. *Al-Kamil*, op. cit., II, 767; W.Wright's ed., 460.

56. *Gloss. dat.*, 394.

57. H.R.P.Dickson, *The Arab of the desert*, London, 1949, 68-9. The cloth projecting above the tent poles might conceivably be compared with a dome (*qubbah*), or vice versa the dome might be likened to the projection of the tent.

58. See p. 442, n. 3.

59. See p. 442, n. 3.

60. The *Taj al-'arus* refers to 'Ali sitting in the *rahbat Masjid al-Kufah, wa-hiya sahnu-hu;* cf. Ibn Samurah, *Tabaqat al-fuqaha' al-Yaman,* ed. Fu'ad Saiyid, Cairo, 1957, 36.

61. D. van der Meulen, *Aden to the Hadramaut,* London, 1947, illustration no. 61.

62. *Al-Mufaddaliyat,* ed. C.J.Lyall, Oxford, 1921, p.213; trans., Oxford, 1918, p.75.

63. Quoted in *Gloss. dat.*, 395.

64. cf. A. Guillaume, *The life of Muhammad,* O.U.P., 1955, 32.

65. Ibn al-Mujawir, op. cit., II, 182.

66. 'Vorislamische Altertumer', *Sudarabiecn-Reise,* Hamburg, 1932, II, 65.

67. *Sauvaget, op. cit.*, pp. 94 (fifteenth century plan), 90.

68. *op. cit.*, p.109.

69. See the plan, based on that of Rathjens and von Wissmann, and supplemented with photographs in Hugh Scott, *In the high Yemen,* London, 1942, p. 172. Ibn Rustah, *Kitab al-A'laq al-nasfisah,* ed. M.J. de Goeje (BGA), Leiden, 1892, VII, 110, reports that it was built on a pre-Islamic site, a temple one surmises, and that this *masjid jami'* was constructed by order of the Apostle of God, near the walls of *San'a',* opposite Ghumdan, of stone and gyupsum (*jiss*). In the place of the *mihrab* was the grave of one of the prophets (*fi mawdi' al-mihrab qabr min qubur al-anbiya'*).

70. Rudolf C. Slatin, *Fire and sword in the Sudan,* trans. by F.R.Wingate, London, 1897, 320. It looks as if 'niche' is a rather unintelligent gloss of the translator, for what Slatin describes is manifestly not a niche,, but a species of *maqsurah.*

Fig. 1:- The Hadrami Mosque. A, the *hammam* or *al-makan al-kanin,* the covered hall; B, the *maharib,* opening on the court of the mosque; C, the *dahi* or *sahn,* the open court of the mosque; D, the *majaz* or passage; E, the *jawabi,* cisterns for ablutions; F, the 'usbi or stone platform upon which the mosque is constructed.

N.B.:- The minaret or minarets are not shown, but as the minaret is usually at the north-east corner nowadays it would be sited somewhere in the region of the area marked E. The *qiblah* would probably lie somewhere above the letter A. Hadrami mosques face only a little only of west, and for this reason the west is known as *al-qibli.*

Fig. 2. The temple at Hugga in the Yemen after Rathjens and von Wissmann. No roof drainage is shown, but probably gutter-spouts (*mizrab*) should be supplied.

THE WOODEN SCULPTURES OF KAFIRISTAN

Rolf Henkl

The word Kafir (in its various spellings kaffir, Caffre, Caffor, Kaffer, etc.) seems to be of Arabic origin and has come to mean to the modern Arab an infidel. The educated in the west mostly know it as the name of an African Negro race of the Bantu family. Etymology is obscure, especially the question whether it wandered from the Bantu dialect into Arabian, or the opposite way. When the Near East was Mohammedanized, all pagans in the bordering countries were termed Kafirs (thus distinguishing them from the infidels in the West, the Faringhi or Franks). A 'black Kafir' - as the word is used in the *Arabian Nights*-is simply a black slave of any Negro race not converted to Mohammedanism. (In Europe, 'Kaffer' is a word of abuse synonymous with ass.) When Mohammedanism extended to Afghanistan and India, the conquests took its usual paths along the great rivers and highways, and for centuries the inaccessible recesses of the Hindukush (or, as in modern Persian, Hindu Koh) remained untouched. The inhabitants practised their own religion and became known to the surrounding Mohammedan civilization as the Kafirs of the Hindukush. Their racial composition is obscure, too. Inaccessible mountain valleys often shield-aboriginal populations, and in some cases preserve crests of invading waves; in the valleys of Friuli (Venezia Giulia), a flax haired, blue eyed strain has survived, evidently descendants of the Goths, who preserved their characteristic intact as if there would not be any Roman traits. But while the very sparse population of the northern and north-eastern slopes of the Hindukush is definitely Mongolian, the larger and more prosperous valleys to the north, south and west (especially those which benefit by the monsoon and are forested, which is rare in these regions) harbour tribes which probably represent a branch of the ancient Aryan invaders of India, mixed-but to a small degree-with unknown aboriginal inhabitants. The language of the Kafirs of the Hindukush was investigated by a Norwegian philologist, Morgenstiern, in his '*Report on a Linguistic Mission to Afghanistan*' (Stockholm, 1935) and more thoroughly by the Danish Scientific Mission to Afghanistan, which left in autumn, 1949, for Denmark; their findings are not edited yet. As far as I could make out, the racial composition of the Kafirs still awaits scientific investigation.

Towards the end of the nineteenth century; news reached circles interested in anthropology in the west about strange wooden sculptures in the Hindukush valleys, present in the villages of the inhabitants in masses, such as were observed elsewhere in the statue-covered Easter Island only. The late Dr. Joseph Hackin, before the second war Director of the French Archaeological Mission in Afghanistan, published a paper in French on these sculptures in 1926 in '*Artibus Asia*', IV, Avalun-Verlag, Hellerau, a publication which has now become extremely rare. At that time, expressionist art was the great new fashion in Europe, and primitive art, which supposedly works along purely expressionist lines, met with the same interest.

Hackin writes:

'Some thirty years after the Hegira, Islam and Buddhism were at loggerheads in ancient Bactria and the valley of the Kabul river. This historical conflict had naturally to end with the triumph of the Musulman invaders. But although Islam easily triumphed over the last descendants of the warlike Kusanas and progressed step by step towards India, the Mohammedans could not rally to their cause the pagan tribes well entrenched in the northern and southern part of the Hindukush, in the valleys between the Alingar and the Kunar, tributaries of the Kabul-rud, and in the valley of the Kokchan or Minjan, a river flowing into the Oxus (Amu-Darya). Tamerlan tried twice to turn this region into a dependency (1399 A.C.). There was even a marble pillar erected, not far from the fortress of Najil, to commemorate the victory of the conqueror over the

Seyah Posh Kafirs. Ahmed Shah unified Afghanistan, Dost Mohammed completed his work by annexing ancient Bactria (1851); but Kafiristan remained practically independent.

Attempts to convert the inhabitants of these regions continued, however, very actively, and missionaries travelled through the length and breadth of the land, but without great success. It was a massacre of the Mollahs by the Seyah Posh Kafirs, which brought about an intervention by the Emir Abdur Rahman. The punitive expedition, organized in 1896, rapidly overcame the last resistance of the natives. The children of the notables of the regions were taken to Kabul for instruction in the Mohammedan religion, and the land of the Kafirs, now entirely subdued by the Emir, became officially the province of Nuristan (the Country of the Light).

Among the spoils of war brought home by the Emir Abdur Rahman were some primitive sculptures, vestiges of the religious art among the Kafirs. As these documents are very rare, we wish to publish them.

"The religion of the Caufirs (Kafirs)", writes Sir Mountstuart Elphinstone, "is quite unlike any other religion.[1] They believe in one god, whom they call *Imra*, or *Tsokooee-Dagouri*; but they also worship masses of idols which, according to them, represent heroes of old; they hope to attain divinity by their intercession."

These idols are made of stone or wood, they represent male or female deities, afoot or on horseback.

A certain Mullah named Nujeeb has seen in the public hall of the village of Caumdaish (Kamdesh) a wooden column on which was seated the figure of a man holding a lance in one hand, a commander's baton in the other. This idol represented the father of one of the old village chiefs, who had acquired the right of erecting this statue to himself by feasting repeatedly the whole village. This is not the only case of such apotheoses known among the Kafirs. Indeed it seems easy to enter their paradise by practising hospitality, which is one of the virtues which they value most.[2] Their paradise they call *Burry-le-Boola*, while the evil ones go to hell, called *Burry-Duggur-Boola.*' (Translated from the French original).

So far Dr. Hackin. As to the pronunciation of the Kafir words quoted by him, I have not been able to make out whether the spelling is always supposed to be according to French phonetics or is partially a direct quotation from Sir Mountstuart Elphinstone.

Veritable forests of sculptures were observed in the Bashgul and Dungul valleys. It is possible that some of the figures survive in remote places; perhaps there is a happy hunting ground for future explorers.

Sir Mountstuart Elphinstone had no opportunity to see the valleys of the Hindukush himself. More information-and authentic one-is contained in the reports from Sir George Scott Robertson, political agent in Gilgit. As Britain consolidated her political position in the North-West of India, attempts naturally followed to penetrate into the mysterious border regions. In 1886, Colonel Lockhart attempted an expedition on a small scale, but was unsuccessful. In 1889, Sir Scott Robertson, incredibly intrepid, set out, accompanied only by a few native porters and some inhabitants of the region to be visited, with whom he had established friendship in Gilgit. He managed to reach Kamdesh, and to stay there for some time, benefiting by the hospitality of the natives, which-as we heard before-is one of their chief virtues. He came again in 1890, and travelled through the surrounding country, collecting valuable information about the costumes and religious beliefs of the Kafirs. He could freely sketch the villages and shrines. He was the last westerner who saw the wooden images in situ, and who could collect information as to their meaning and worship, although he was not permitted to witness ceremonies or to see the inner recesses of the shrines. What he saw, incidentally, confirms the informations furnished by the Mullah Najeeb to Sir Mountstuart Elphinstone. Sir Scott Robertson published a book on his voyages *(The Kafirs of the Hindukush*, London, 1896).

The sculptures brought home to Kabul by the Emir Abdur Rahman, the largest being an equestrain statue (pic. I), found asylum-first a rather precarious one, as their presence scandalized the Mullahs, but now a scientifically established refuge-in the museum in Kabul, where they fill the room known as 'Kafiristan Hall' (the ending 'stan' meaning 'country of...'). Some of them are also in the museum in Peshawar. They are roughly done sculptures in wood, made probably with use of no other tools but axes and knives. Sir Scott Robertson reports that the biggest of them were hewn in the forest into the approximate shape, and then transported to the villages where they were completed. Some of them are of superhuman size, and there were also some very large ones. Their size prevented their being taken along by the conquering Afghans, who had to destroy them on the spot, in order to exterminate idolatry, thus depriving posterity of a sight of these works of primitive art. They were not different in their characteristics from the smaller or undersized pieces which have come down to us. We cannot agree, however, with the first and only encountered opinion about their artistic value, expressed by Dr. Hackin in his above mentioned paper. Hackin's judgment about them was based on the golden rules of Graeco-Roman art. We know better nowadays. An enormous progress has been made in the world, silent and little noticed by the public, but all-pervading, in the appreciation of art. While all former generations considered art as either civilized (mostly their own one) or barbaric, we have, for the first time in human history, reached some sort of unbiased outlook, and possess a capacity of judgment which we could euphemistically term an absolute or near-absolute meter for value in the arts. This great advance has come to us since expressionism is in the world, and the Nazi tried in vain to retard it by declaring all modern art degenerate. The same opinion was expressed by Dr. Hackin on the Kafiristan sculpture; but degeneration cannot take place unless it is preceded by high artistic values, a development, of which, in Kafiristan, there is no trace. On the contrary, we must see in them an original contribution to art, without a precedent; and neither can, in my opinion, European expressionism-which now finally has reached also the Americas, and flourishes there at present-be rightly called a degeneration by its adversaries, because, although its introduction has followed a certain historical pattern-classicism under the empire, impressionism, pointillism, expressionism-it breaks away too, widely from its precedents to be confounded with them even under the term of degeneration. Primitive art is a fresh departure, based on no layer of previous artistic (but may be religious!) tradition. Whether 'primitivity' also means freedom from outside influences, and what is the relationship of primitive art to expressionism, we shall presently investigate.

What does Dr. Hackin say about the artistic value of our figures-(the first writer to express an opinion about, as Sir Scott Robertson's book is purely descriptive)? He calls them 'grossly schematic, void of original composition, false primitive'. We shall investigate these charges.

The first reproach-being schematic-looks indeed grave. It sounds as if such works would be deprived of any individuality and thus represent real emptiness. But I am afraid we are too much anchored in the classic European viewpoint. Our present independent meter, with which we measure art, will help us to remove the star in a therapeutic way not unlike that of the modern school of philosophy, which aims at clearing up semantics by splitting the meaning of conventional words very deeply; explaining, that there is by no means an entity called the ego on the only ground that we all know how to use the first person singular. (A language of philosophy seems uses pure symbols). Has the idea of individuality in artistic representation formed a part of art from its earliest beginnings? By no means. Art was always very schematic. Egyptian Pharaos in stone-Buddhas from Ceylon to Tibet and Japan-Byzantine paintings of Christ and the saints-Gothic kings in the Crypts-Alaska totem poles-the patterns in Chinese silk and Flemish tapestries-where do we find anything else but schematic representation, with the only exception of Graeco-Roman art and its offshoots, a great individualistic world, no doubt, which has come to be overrated, though, with the expansion of European political and cultural influence into the world. And even Hellenistic sculpture is not void of a certain schematism. Gods are represented as certain types, in a certain age, with certain attributes, and referring to certain myths. Thankful as the world has to be to the great occidental idea of individualism, one of the most liberating ideals the world has seen, we cannot but admit that the representation of gods, saints, heroes, myths, kings, ancestors, has always and in all countries and periods been greatly schematic. And little chance seems to be that the world will get more idealistic. Look at the schematic monumental sculpture of the Soviets, or the abstract sculptures of the most modern, like Picabia, Brancussi, Moore. Thus the utter schematic appearance of the Kafiristan plastic work cannot be interpreted as depriving them of artistic value.

As to the second reproach, void of original composition, the problem of originality is intimately connected with the question of outside influence. What exactly does originality mean? Does it mean that every original work ever produced must be entirely different from all its predecessors in history, in style, form, appearance, contents, if it is to enjoy a good press, and must it be free from any influence whatsoever? Manifestly this cannot be true, and a postulate of this kind must be considered as overgrowth of our individualistic tendencies. Greek art is not inferior or showing weak spots, because it took from the Aegean world; and neither is a Khmer Buddha less beautiful because he is made after Indian patterns. Nowhere in the biological world is anything found without signs of mutual influence which rules the world of appearance. Never a species has suddenly sprung up, showing no relationship to other kinds. I am afraid we cannot entertain the second reproach either, although Hackin points out a definite influence of ancient Persian art f.i. in the headgear of the statue shown at the left side of plate I, pict. 2. The empire of the Achemenidas reached thus far, and royal or hieratic statues might have survived till the Kafir artists saw them. Also Islamic influence is undoubtedly present, as f.i. in the turban like formations. Our sculptures are evidently not only primitives, but also members of the ancient world and the world of the middle ages. As to originality in the ordinary sense, I think all of you, or at least those of my listeners who saw the pictures for the first time, were struck with the great originality of these entirely schematic statues; I personally have made a study of primitive art all over the world from Tenochtitlan to Bali, and must confess the art of the Kafirs possesses a very special aura found nowhere else. Also from a purely technical viewpoint, there is no lack of original ideas. A round construction like the arms in the statue in the center (plate I, lower picture), which recalls the Ahir sculptures of Bihar, is something striking; the representation of 'double sexed' women with beard recalls the Ainu custom of tattooing women with beard and moustache (the Ainus are said to be Aryans). The sexual symbols, breasts and female genitalia (the sculpturing of which is unheard of in Central Asia) seem to point to influence from Oceania or Africa. The woman images (like the one shown on the right side of plate I, lower picture) are blackened by thick layers of blood from sacrificial animals.

A wooden pole (pict. III) showing two embracing warriors, represents a motive apparently entirely new. We had a sketch made of it, as photographs did not turn out well owing to the darkness of the room. The statues in the museum of Kabul cannot be moved, they are cemented to their base; but the sketch represents them quite well.

Some of the statues (picts. IV, V) show not the slightest difference from the fetishes of the Negroes. It is, of course, highly improbable that there was any real intercourse between regions as remote and inaccessible as the valleys of the Hindukush, and Oceania or Africa, in the historical past, not to speak of modern times, and theories like common branching off from prehistoric wandering masses of humanity and racial memory are too disputed to enter into our consideration. The only explanation is multiple relationship of all primitive art, not arising from practical contacts, but from equality of psychological sources.

There is a great number of other seemingly foreign influenced traits in our sculptures, which supports the above statement. In the museum of Peshawar, a woman is seen astride two horses, which recalls to me a performance of this kind, in gallop, of Kossak woman (in uniform very schematic) which I have seen in a Russian movie, as performing before the Czar. The neck of the horses is definitely Roman-Byzantinian. On the back of the horseman in picture I is seen an ornamental wheel, not unlike the Buddhistic wheel of rebirth with the running feet, or the wheel of the pure law (of Asoka) which in turn seems to stem from the ancient Aryan sun wheel. But the most interesting background to our statues is provided by Sir Scott Robertson's chapters on the religion of the Kafirs. The report of the writer, who seems to have written without knowing the true importance of his discoveries, makes it most probable that we are, in the Kafir plastics, and religion, confronted by a layer of Aryan thought, delivered to us in Persian and Mohammedan stylish disguise, but rooting in times considerably older than the first Aryan immigration into India. Indeed, the mythology of the Kafirs reads like the Edda. The religious scope of our sculptures is hero worship during life as well as after death; the sculptures were either erected on graves or as monuments, thus ancestral, or for successful warriors during their lifetime; rich people-as mentioned above-even bought the right to have some made for them by feasting the priests and co-villagers. Our rider in the first picture is not armed, but Scott Robertson saw a huge figure on a grave mound wielding a spear. Who would not think at once on the manner of burial among the old Nordic nations, of Alarich, King of the Ostrogoths, buried in the Busento in full armour, on horseback, lance in hand? The world of the Kafir is, like that of the ancient Teutons, divided into three realmis, *Urdesch* (*Urd, the north*), *Mischdesch* (clearly Midgard, the middle realm or earth) and *Shtondesh* (the Greek *chtonic* gods, those below the earth, who, in the Aegean world, also received bloody sacrifices like our statues, even sacrifices of small children, which is proved by the unearthing of toy figures of clay in Greece published in the *London Illustrated*, archaeological page, some years ago, showing priests of the chtonic gods, one holding the sacrificial child in his arms ready for the slaughter). The Kafirs sang hymns over the graves called *lalu* (Greek) preserved in such words as *coprolal*. They thought the soul conserved in the breath (atman, atmen, to breath). A tree, 9 years high and 18 years large, in which the goddess *Dizane* was born, is the World-Tree *Yggdrasil*. *Imra*, one of their highest gods, endowed his prophets *Moni, (monos*, the only one, to which others later accrued, like Gish and Sataram), with his breath, like the clay man in the Bible. *Dizane* sprang from *Imra's* right breast like Athena from the head of Zeus. *Moni* slays a demon by decomposing him (like a robot!), and seven demons arise from his fragments (the heads of the hydra). Waters form a wall right and left of him like for the Hebrews fleeing through the Red Sea (that is the saving of the selected ones from the deluge, a story quite common to most mythologies). In the sacred precincts of the Kafirs were holes into the earth, into which nobody was allowed to look, lest death overtake him (at the bottom being, doubtlessly, the *Basilisk* of ancient Aryan tales). Totem poles with animal heads (pict. I, dimly visible) were erected, and there were Tabus, as f.i. fields, belonging to the gods, which nobody might work, which points to the connection of taboos with fertility and agriculture discovered by Freud. Thus our mythologic features are either general or pronouncedly pre-Vedic Aryan.

Finally, as to the question of right or false primitivity, if we disregard the question of tools and technique, the primitive artist is one who transports into matter his thoughts and feelings (no matter how they came to be or from where they were influenced or what purpose they served) in the so-called direct way, that is, without regard to visual reality or any principle to base artistic representation on exact replicas of objective life. His phantasy is as creative as nature. Expressionists are, according to J.P.Hodin, artists who 'possess a collective unconscious whose contents and functions are of an archaic nature', that is, not imitating the archaic, but having mythological parallels (quite unrecongnizable to the untrained mind in the modern western artist, but clearly present in the uncivilized religious sculptor). 'Hence the expressionist artist is associated with the myth building force, that truly creative, spiritual force, out of which the symbols were created that gave form to men's conception of life and the world'. In this sense, the artists from the Hindukush are both true primitives and expressionists.

Referring again to the sketch of the two warriors in embrace,- perhaps it symbolizes blood-brotherhood,a custom prevalent among all Aryan peoples of old (but also among the North American Indians and among other cultures). When looking at the arms, seemingly *glued* together. I could not help thinking on the Magic Incantations from Merseburg,-

Ben zi Bena	(Bone to Bone,
Bluot zi Bluoda	Blood to Blood,
Lid zi Geliden	Limb to Limb,
Sese gelimida sin	As if they were glued together).

This is the oldest piece of Aryan poetry discovered in writing so far. But perhaps this is more conjecture than science, though parallels are striking.

Finally let us compare the rectilinear Kafir style with pure cubistic art (Picasso and Bracque, pict. VI). Cubism is the introduction of purely intellectual principles into painting; the dissolution of all forms (but not colours!) into cubic shape; it could have been round disks or triangles, for that matter, but the cube or square was evidently chosen as being the most forceful of all geometric patterns. The straight lines and corners of the Kafir artist have, of course, something to do with his tools; but this need not necessarily be the case, as the work of other primitives (f.i. in Oceania) shows beautiful round forms in abundancy. The Kafirs thus represent a case of 'natural' cubists. The forcefulness of the cube simply appealed to them as it did to Picasso and Bracque. They choose it freely; if they reflected, they thought perhaps on the four corners of the earth (quadrangle of the geomancer) and similar shapes in ancient shrines, sacred tents, etc.

The primitive style (according to J.P.Hodin) has symmetry in the grouping; the structure is simple; the colour is even and strong; the distribution in space parallel or radiating; the extension two-dimensional, the line continuous, the rhythm established by repetition, symmetry and parallelism. The element of movement is supplied by the narrative content. Among primitive peoples the formative will is governed by the magic and the hypnotic...' All these elements seem to be present in the Kafiristan sculptures, including the last two mentioned qualites; the magic, of course, only inasmuch as the old Nordic tribes, whose influence we have perceived in Kafiristan, believed in it (and that was quite to a large extent), as we are still ignorant, and perhaps shall for ever remain, of such additions as the Kafirs probably made through the spoken word; the presence of the hypnotic we can clearly see in the attitude of the figures.

The linear development, which we observe, e.g. from the Primitive to the Classic and on to the Romantic (and its refinement into *Rokoko*) and again back to primitive elements, is, of course, not undisputed. '...experience has warned us against any assumption that a grosser form necessarily preceedes a more refined one; humanity moves by zigzags, in cycles, by way of complication, and indeed degeneration quite as often as, if not more often than, by advance' (C.C.Martindale). Admitting the truth of this statement (which refers to religions), we cannot but pay heed, in the realm of the arts, to evidence. Until anything new will be unearthed in Kafiristan, its sculptures must be regarded as aboriginal forms, influenced by nothing else than the traceable descendancy from the Aryan Olympus, in a strange transvestment of gobbled-up Persian and Mohammedan attire, assumed visually at a time when the spirit of these cultures was by no means absorbed by the local artists. Regarding any other parallel features we might be inclined to see, we must, with Martindale, recognize, supported by introspection and observation of contemporary psychology, 'the extreme improbability of the minds of races other than that of the student (in time, origin of culture) acting as does, save in what can be proved to be fundamental in human nature. When this is found, the probability of similar parallel consequences always take precedence over the theory of loans between one cult or another, when these cannot historically be proved'.

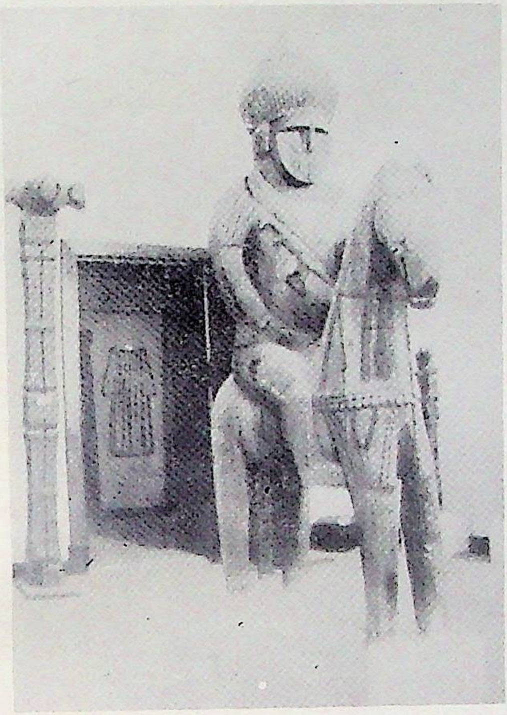
Summing up, we have come to perceive a multiple relationship of all primitive art, arising not from contacts over land and sea, but stemming from the same psychological sources; we have convinced ourselves that the artists from the Hindukush have given to posterity some of the very few remaining primitive sculptures in Asia (of which other continents are so rich; but in Asia advanced civilization arose very early and obliterated them); we perceive in our sculptures examples of expressionist work before expressionism was cast into contemporary theories, existing, however, as a symbol-creating force today as it was in the remotest past.

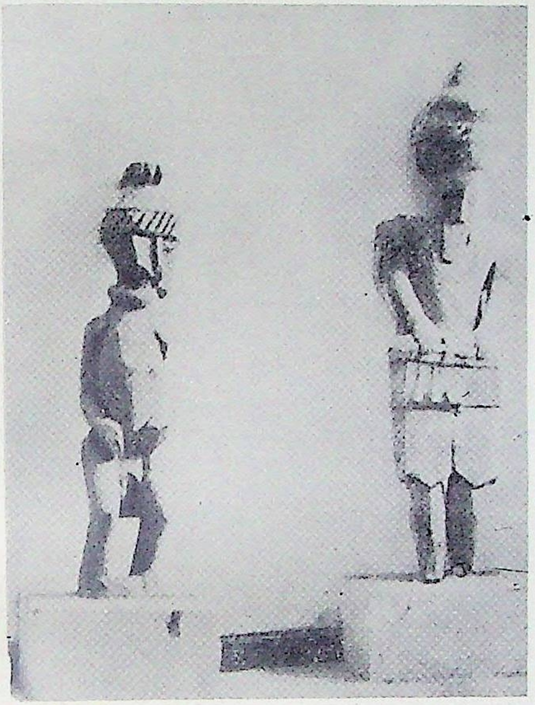
Notes & References

1. Quite a mistake as we shall see later. The quotation is from his book: 'An Account of the Kingdom of Caubul, etc., by the Hon. Mountstuart Elphinstone, (etc. etc.).... late envoy to the King of Caubul (=Kabul)', London, 1815.

2. Note that such feasts (and apotheoses) are frequently reported of the old Nordic heroes.

PLATE 1.





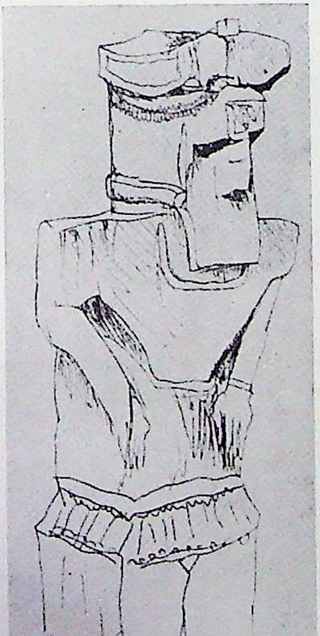
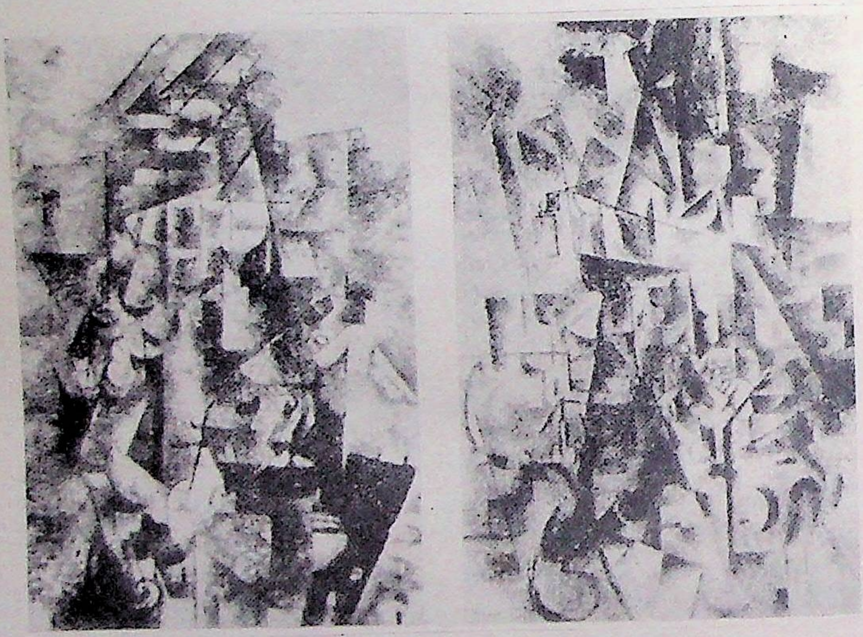


PLATE 4.



(Braque) (Picasso)

THE PROBLEM OF SQUARING THE CIRCLE AND IRANIAN CONTRIBUTION TO IT

P.N.Mitra

1. The Problem

It has been common saying that it is impossible to fit a square thing into a round hole, and the impossibility is obvious to every casual observer. But a problem akin to this engaged the attention of Mathematicians from the very earliest times. It goes by the name of squaring the circle. By squaring is not meant the Arithmetical square, i.e. the product of the circle by itself. The problem aims at the quadrature of the circle, and at finding a square whose area is the same as that of the given circle, with the help of ruler and compass only.

2. Earliest attempts at solution

The earliest attempts were all empirical, and they naturally resulted in rude approximations, which in some cases greatly differed from the actual values. In some cases attempts were made to find a straight line equal in length to the circumference of the circle, and then to describe a square with the same length as perimeter so that each side would be quarter of it. The idea underlying this process was perhaps that equal areas would be contained by the same length whether it was placed in the form of a circle or a square. So the problem then hinged on th rectification of the circle. This length could be obtained by rolling the circle along a straightline. Generally a circular cylinder with a marked surface was used for the purpose. The areas of the circle and of the square thus formed were taken to be equal. But with the subsequent development of Mathematical theories it is easily seen that these two areas are far from being equal.

For taking a circle of radius r, the present day formula for rectification gives the length of the circumference of the circle as $2\pi r$, and the area of the circle as πr^2, where π denotes the ratio of the circumference to the diameter. Hence taking a square each of whose sides equals $\frac{1}{2}\pi r$, we get the area of the square $= \frac{1}{4}\pi^2 r^2$. But the area of the circle is πr^2. Hence if these areas are the same, we must have

$$\pi r^2 = \tfrac{1}{4}\pi^2 r^2 = \tfrac{1}{4}\pi . \pi r^2$$

i.e. the are of the square is $\frac{1}{4}\pi$ times the area of the circle, and as these two areas are equal we have $\pi = 4$. Thus in those days the circumference of the circle was considered to be 4 times that of the diameter.

But taking the true value of π as 3.1416, it is easily seen that the area of the square with sides equal to $\frac{1}{2}\pi r$ is equal to .7854 times the area of the circle of radius r, i.e., a little greater than ¾ of the area of the circle. Similarly the area of the circle is $4/\pi$ times the area of the square, i.e., the area of the circle is 1.273239 times the area of the square described on a side of length $\frac{1}{2}\pi r$, that is, it is in excess by over a quarter of the square. Of course a closer approximation to the area would have been obtained by taking the square on a side of length 1.128 of $\frac{1}{2}\pi r$, i.e., on a side of length .282 of the circumference of the circle. But not to speak of decimals, even fraction was a thing unknown to the people at that age. They were perfectly satisfied with their crude approximations, and did not care, nor could they arrive at Mathematical or numerical precision. Such attempts were all made before the scientific period of Greek civilisation.

The ancient mathematicians had no knowledge of the symbol π, nor did they take π equal to anything. What they actually did was that they took the circumference of the circle equal to some multiple of the diameter. This ratio of the circumference of the circle of its diameter plays an important part in finding its area, and differed with different peoples. We denote this ratio by the symbol π, though unknown in ancient times.

The ancient Babylonians took $\pi = 3$. If we go back to the period of the *Old Testament*, we find the value of $\pi = 3$. Thus in 1 *Kings*, VII, 23[1], we have *Solomon's* molten sea:

> "And he made a molten sea, cubits from one brim to the other: it was round all about, ... and a line of thirty cubits did compass it round about."

In *Talmud* and *Mishna* this ratio is always 3, the reason being traditional, based on Solomon's molten sea. In early Chinese works[2], e.g. in *Chou-pet* this value is taken to be 3.

Accepted literally this seems to deny implicitly the existence of Mathematics. The Baby Lonian mensuration of the circle throws into sharp relief the distinction between what is Mathematics and what merely resembles Mathematics.

In early Hindu texts also we find that they based their calculations of the circumference of the circle on the assumption that it was three times the diameter. So in *Matsya Purana* the circumferences of the Sun and the Moon are taken to be thrice their respective diameters expressed in Yojanas.

In *Aditya Purana* the breadths of the Dwipas (i.e. the islands) and of their surrounding seas are given, and then the circumference is given as thrice the diameter.

In *Vayu Purana* the ratio is taken to be 3. Thus for all practical purposes 3 was taken as the value of π.

In Colebrooke's *Brahmagupta*, p. 308, we have

> "The diameter and the square of the semi-diameter, being severally multiplied by three, are the practical circumference and the area."

3. Attempts in Egypt

The first definite trace of the approximate value of π may be said to be found in *Ahmes Papyrus*. This Papyrus[3] is included in the Rhind collection of the British Museum and was deciphered by Eisenlohr in 1877 A.D., and found to be a mathematical manual containing problems in Arithmetic and Geometry. It was written by Ahmes sometimes before 1700 B.C. and was founded on an older work by Birch to date as far back as 3400 B.C.[4]

Professor Peet[5] gives the probable date of *Ahmes Papyrus* as between 1788 and 1580 B.C.

This curious Papyrus - the most ancient book known to us puts us in contact with mathematical thought in Egypt of 3 or 5 millennium ago. It is entitled - *"Directions for obtaining knowledge of all dark things."* We find from it that the Egyptians cared very little for the theoretical results. It contains no theorems, and "hardly any general rules of procedure, but chiefly mere statement or results intended possibly to be explained by a teacher to his pupils".[6]

In this book we have a problem the solution of which depends upon the finding of the area of a circle, which is obtained by deducting from the diameter 1/9 of its length and squaring the remainder. Thus taking d to be diameter, the area of the circle, expressed in modern symbols would be

$$(d - 1/9d)^2, \text{ i.e., } (8/9d)^2$$

So if r be the radius, the area of circle becomes

$$(8/9\ 2r)^2 = (4/3)^4 r^2$$

Hence comparing with πr^2, we get for the first approximation

$\pi = (4/3)^4 = 256/81 = 3.16049$, a very fair approximation of the result obtained empirically.

4. Attempts by the Greeks

Centuries later the inquistive mind of the Greeks were not satisfied with mere empirical and experimental results, and they wanted to demonstrate the truth of the results obtained empirically. Anaxagoras (500-429 B.C.)[7] while in prison passed his time in attempting to square the circle. This is the first time in the history of Mathematics that we find the mention of the famous problem of the quadrature of the circle, but the results of his investigations are not known. It turns upon the determination of the exact value of π. Approximations of the value of π had been made by the Chinese, the Babylonians, Egyptians, Indians etc. The invention of a method to find its exact value engaged the attention of many minds from the time of Anaxagoras down to our own. The problem soon attracted popular attention. The comic poet Aristophanes (448-385 B.C.) made a reference to it in his play entitled *the Birds* in 414 B.C.[8]

Such problems had probably been the subject of more discussion and research than any other problems in Mathematics.

Hippocrates of Chios (460-377 B.C.)[9] attempted to solve the problem by squaring several curvilinear figures (*lunes*),[10] but he committed the fallacy in assuming that every lune can be squared whereas he proved the possibility in the case of lunes of isosceles right-angled triangles only.

Antiphon tried to solve the problem by the method of exhaustion.[11] He inscribed a polygon (according to some a triangle, or a square) in the circle and calculated its area. Next he doubled the number of sides of the polygon and found its area. In this way he successively doubled the number of sides so that ultimately the difference between the area of the polygon and the circle was practically negligible. This area was taken as the approximate area of the circle.

The most noteworthy contribution was made in 225 B.C. by Archimedes of Syracuse (287-212 B.C.)[12]. In his book *On the Measurement of the Circle* he first proved that the area of a circle is equal to that of right-angled triangle, having the length of the circumference for its base and the radius for its altitude[13]. In this he assumes the existence of a straight line equal in length to be circumference of a circle - an assumption which was objected to by some ancient critics[14] on the ground that it is not evident that a straight line can equal a curved one. Archimedes, however, tackled the problem in this way. He took an equilateral triangle of which the base is a tangent and the vertex is the centre of the given circle. Evidently six such triangles can be drawn, the bases of which will form a regular hexagon circumscribing the circle the area of the circle is less than the circumscribing hexagon, and the circumference less than the perimeter. Bisecting the anlges at the centre he got a regular polygon of 12 sides circumscribing the circle. By successively bisecting the angles at the centre, he obtained a regular polygon of 96 sides circumscribing the circle, and at each bisection the difference between the areas of the polygon and the circle diminished. Taking the perimeter of the circumscribing polygon of 96 sides as approximately equal to the circumference, though always a little greater, and calculating it he concluded that the ratio of circumference to the diameters, i.e., π was less than 3 1/7. Then he finds a lower limit by inscribing in the circle regular polygons of 6, 12, 24, 48 and 96 sides, finding for each successive polygon its perimeter which is always less than the circumference. In this way he concluded that π > 3 10/71, so that 3 1/7 > π > 3 10/71. Thus the fractional portion is really less than 1/7 and greater than 10/71. The required area of the circle is always less than that of the circumscribed polygon and greater than that of the inscribed one.

At this stage where Archimedes stopped in the third century B.C. an approximation to the area of the circle is obtained from the calculation of a regular polygon of 96 sides. If the number of sides be infinitely increased the difference between the areas vanish, and the area of the limiting polygon is equal to the area of the circle. Hence it is neccessary to know the area of a regular polygon of *n* sides. This is easily done once the area of an isosceles triangle is known. Hence if the limit as the number of sides is infinitely increased, exists and canbe calculated, the problem is solved. And here is the crucial step in obtaining the exact formula for the area in passing to the limit as the number of sides is infinitely increased. Archimedes, however, found the area from that of a right-angled triangle once the circumference of the circle was approximately obtained by means of polygons. Taking the value of π as 3 1/7, Archimedes obtains the length of the circumference as 3 1/7 *d*, *d* being the diameter, and thus the area of the circle is ½. 3 1/7 $d = 22/28\, d^2$, so that the area of the circle to the square on the diameter is approximately 11:14.

Since the time of Archimedes 3 1/7 was taken as a satisfactory approximation of π and was used as such by Heron of Alexandria (50 A.D.), Ptolemy (150 A.D.) and other subsequent mathematicians. Ptolemy expressed the limits in sexagesimals giving

3 1/7 = 38' 34.28" and 3 10/71 = 38' 27.04"

and took the mean of these two and 38'30" as the approximate value of π, which gives π = 3.14416[15]

Circle squares have existed in crowds ever since the period of Archimedes. After innumerable failures to solve the problem, persons versed in Mathematics dropped the subject, while those who still persisted were completely ignorant of its history, and generally misunderstood the problem, *viz.* to solve it with the help of ruler and compass only.

5. Attempts by the Indians

In the early Hindu texts we have found that the value of π was taken to be 3. In later times, however, Hindus became aware of the fraction following after three whole numbers. Thus the rule in *Surya Siddhanta* is to multiply the square of the diameter by 10, and the square root of the product will be the circumference. Thus taking c as the circumference, and d as the diameter, the rule gives $c = \sqrt{10\, d^2}$, so that $\pi = \sqrt{10} = 3.16227...$

In *Surya Prajyapati* (c. 500 B.C.) two values of π are given. One is $\pi = 3$ due to ancient writers, and the other is $\pi = \sqrt{10}$. This second value was approved by the author and was thenceforth adapted in Jaina literature, even when Hindus had discovered more accurate values of π. Hindus computed the value of π from the perimeter of regular polygon of 384 sides and found the value of π which in decimals can be put as 3.1416 In sutra 20, the diameter as 315089 yojana and a little over. There are also given values of successive orbits and diameters, all of which are based on the relation $c = \sqrt{10d^2}$. In a commentary of *Surya Prajnapti* by Saint Bhadrabahu (c. 318 B.C.) the same relations of circumference and diameter are found. In the *Tattvarthadhigama-Sutra-Bhasya* of Umasvati (150 B.C.) along with other mensuration formulae, we find the circumference and area of the circle given as

$$c = \sqrt{10d^2},\ \text{area} = \tfrac{1}{4}\, cd.$$

These are also given in his *Jambudwipasamasa*[16]. These formulae may have been taken from the earlier Hindu works and the above works. In *Jambudwipa Prajnapti* (c. 500 B.C.) Sutra 3, Jambudwipa is taken circular in shape, and its diameter = 100000 yojana, and circumference=316227 yojana and a little over. In *Jivabhigama Sutra* (c. 500 B.C.) sutras 82,124, the same relation between c and d are given. It is also stated in Sutra 112 that for an increment of 100 in the diameter, the circumference increases by 316, which gives $\pi = 3.16$.

It is interesting to note how $\sqrt{10}$ came to be taken as the approximate value of π. The Hindus obtained two approximations for the square root of any number, one by excess and the othe by defect. Thus if n be the number whose squrare root is sought, the approximation by excess will be

$$\sqrt{n} = \sqrt{a^2 + k} = a + k/2a$$

and the approximation by defect will be

$$\sqrt{n} = \sqrt{a^2 + k} = a + k/2a = 1$$

From this we see that

$$\sqrt{10} = \sqrt{3^2 + 1} = 3 + 1/2.3 + 1 = 3\ 1/7,$$

which explains why $\sqrt{10}$ was so often used for π by early writers. The Jaina Mathematicians have taken this result from early Hindu writers.

Having obtained the circumference in this way, it was easy to get the area from that of a regular polygon. If there are n sides, the area is divided into n isosceles tirangles with their vertices at the centre, and the area of each triangle is $\frac{1}{2}c/n.r$, so that the area of the circle is $\frac{1}{2}cr = \frac{1}{4}cd$. Thus the area is equal to that of a triangle with circumference as base and the radius as altitude. Archimedes also asserted, and according to some, proved the same proposition in the case of a right-angled triangle with sides c and r forming the right angle. Having got this triangle it is easy to obtain a rectangle and thence a square equal in area to that of the triangle. By placing the n isosceles triangle side by side such that each vortex lies on the extremity of the base of the preceding triangle, a parallelogram can be formed with sides $\frac{1}{2}c$ and r, which in the limit may be taken as the rectangle $\frac{1}{2}c.r$. But the square, rectangle or the triangle gives only the approximate value, and does not represent the actual area.

Aryabhatta (*c.* 510 A.D.) formulated the following rule for finding the value of π[17].

> "Add 4 to 100, multiply by 8, add 62000, and you have for a diamter of 2 ayutas the approximate value of the circumference."

The word ayuta means 10000. This gives $\pi = 3.1416$

Brahmagupta (628 A.D.) also took the $c = 3\ 1/7d$, but he finds this number by a peculiar method. He says:

> "As the root of 10 is 3 1/7, the relation between the diameter and its circumference is like the relation between 1 and 10".

Then he multiplies the diameter by itself, the product by 10, and of this product he takes the root. Then the circumference is solid, i.e., consists of integer in the same way as the root of 10. This calculation, however, makes the fraction longer than it really is.

Aryabhata took circumference of the Earth as 3393 yojana while he took diameter as 1080 yojana in one place and 1050 yojana at other places so that π is either 3 17/120 or 3 81/350 i.e., either 3.1516 or 3.2314, for which Brahmagupta criticized him severely.[18] Brahmagupta took d=1581 and c = 5000 yojana giving π = 3.162.

Paulisa took d = 1600 yojana and c = 5026 14/15 yojana which gives π = 3.14183. Paulisa also took π = 3 177/1250, i.e., 3.1416.

Mahavira (*c*. 850 A.D.) and Sridhara (*c*. 1020 A.D.) gave both 3 and √10. Bhaskara (*c*. 1150 A.D.) used 3927/1250 for the near value and 3 1/7 for the gross value.

6. Attempts by the Persians

In the reign of Caliph al Mansur (7112-775 A.D.) of Bagdad an embassy consisting of Hindu scholars went to his court at his invitation with astronomical tables etc. which were translated into Arabic. These were known as Sindhind and Alarkand, which are generally believed to be the translation of *Brahma Sphuta Siddhanta* and *Khanda khadyaka* of Brahmagupta. A Persian named Yaqub Ibn Tariq also went to the court of Caliphs about this time and is said to have assisted in translating the works of Brahmagupta. In his book *`Composito Sphaerarum'* (*c*. 775 A.D.) he takes the circumference of the Zodiac as 1,256,640,000 yojanas and diameter 400,000,000, yojanas, so that their ratio is

$$\frac{56,640,000}{400,000,000}$$

which on simplification becomes 3 177/1250, the value used by Paulisa.

According to Yaqub, the diameter of the Earth is 2100 farsakh and its circumference 6596 9/25 farsakh. 1 farsakh = 16000 yds = ½ yojana. On this basis he computed the distance of planets.

The credit for giving the value of π to a higher degree of accuracy than any of his predecessors may be given to Mahmud Giyat-al-din al-

Kashi. He expressed it to 16 places of decimals (written in Arabic characters). He was assistant of the Persian Prince astronomer Ulugh Beg (1393-1449 A.D.)[19] who erected an astronomical observatory at Samarkand which at that time was regarded as one of the wonders of the world, and appointed al-Kashi[20] as its first director. In fact the invention of decimal fraction was in its infancy then, and al-Kashi was perhaps the first mathematician to recognize this type of fraction in the East. In his al-*Risali al-mohitije* (*Treatise on the Circumference*) (c. 1430 A.D.) he gives the value of π as

Sah-hah
3 1415926535898732,

the term Sah-hah meaning complete integer. Thus 3 is the integer and the portion at the right-hand side being the decimal fractions. It is earlier than any similar one to be found in Europe.

Adriaen Anthoniszoon and his son Adriaen Metius (1571-1635 A.D.) took $\pi = 355/133$. They took the limiting values of π as 3 15/106 and 3 17/120, i.e., $3\ 15/106 < \pi < 3\ 17/120$. They added the numerators $15 + 17 = 32$ and the denominators $160 + 120 = 226$ and took their means 16 and 13 and took $\pi = 3\ 16/113 = 355/133 = 2.1415929$, a very close approximation.

The contributions of mathematicians in evaluating π are too numerous to be included in this short paper. It has been rightly observed by prof. E.T.Bell of California that "the long chronicle of π signifies vastly more for the history of mathematics than a rather dreamy record of successive approximation from the crude 3 of the Babylonians of about 2000 B.C. to 707 decimal places of W.Shanks in 1853 A.D."

Notes and References

1. See also 2 *Chronicles*, IV, 2.

2. See Mikami- *China*, p. 8. 46, 135.

3. Papyrus is a tall rush like a plant of the family *Cyperaccae* growing in the delta and banks of the Nile and in West Asia. Its stems were used by ancient. Egyptians as the predecessor paper to write on. Hence it came to denote a manusceipt written on papyrus. The oldest extant Egyptian papyrus dates as far back as 2500 B.C. The term paper is derived fromm papyrus. Paper is nothing but thin fabric of fibres compressed into sheets. It originated in Asia before the Christian era and was introduced in Europe in the 8th century.

4. Carl Anton Bretschneider (1808-1978 A.D.). Professor at the Real Gymnasium at Gotha in Thuringia- *in Die Geometric und die Geometer vor Euklidas* 1807, Leipzing pp. 6-8.

5. *Rind Paprus* -Peet p. 33.

6. James Gow- *A short history of Greek Mathematics* Cambridge, 1884 p. 16.

7. Anaxagoras (500-42d8 BC) was a Greek philosopher of the Ionic School. He promulgated the atomic theory that all matter was composed of minute particles known as atoms. He also given an explanation of the physical aspect of the sun, the moon and the universe much akin nto our present day theories. He was put in prison for teaching his theories and tried for impiety, but was subsequently saved by his pupil, the great Greek statesman Perickes. Socrates was also his student.

8. Aristophanes was a comic dramatist and poet of Athens, and wrote 54 comedies, of which only eleven are estant.

9. F.Rudic- *Bibliotheca Mathematicas*, III, Vol. 8, 1907-8 pp. 13-22.

10. Sir T.L. Heath- History of *Greek Mathematics*, I, pp. 183-201.

11. F.Rudio- *"Der Bericht des Simplicius uber die Quadraturen des Antiphon und Hippokrates."* Bibl. Math. III (3), 7.

12. He was the most celebrated of ancient Greek mathematicians. He was equally versed in the Sciences of astronomy, geometry, hydrostatics,

optics and mechanics. He gave a spherical representatio of the motion of heavenly bodies. He invented burning glasses with which he set fire to the enemy ships by focussing the rays of the sun upon their sails.

13. Sir T.L.Heath- Archimedes, pp. 231-233.
-History of Greek Mathematics, II pp.50-56.

14. Heath- History I, p.233.

15. See K.P. Mody's edition, Calcutta, 1903.

16. L.Rodet- *Leoions de Calcul a Aryabhata,'* Journal Asiatique,p.II.

17. G.R.Kaye- *'Notes on Indian Mathematics, No. 2, Aryabhata'* in Jour. and Proc. of the Asiatic Society of Bengal, IV.

18. Alberuni's India edited by Sachau.

19. Ulugh Beg was a grandson of Timur and son of Shah Rukh and Gawhar Shad, he was a man of letters, artist and scholar and "really made Samarkand, what Timur had dreamt of, centre of Muslim civilisation". (R. Grousset- *Hist de l'Asie* iii 127). He was a mathematician and astronomer of great repute. Trigonometrical Tables for sine, tangent and cotangent were prepared under his direction. Three or four astronomers worked and collaborated with him in his observatory of prepare these tables.

20. Giyatal-din al-Kashi was the first director of his observatory. Ulugh Beg invented new and poerful instruments for their observation and research. Unfortunately this observatory which was regared as one of the wonders of the world, is no longer in existence. His son `Abdd al-Latif rebelled against and defeated his father Ulugh Beg, and handed him to a Persian servant named `Abbas, who after a show of trial had Ulugh Beg executed on Oct. 27, 1449. With the death of Ulugh Beg, the period of astronomical work and reasearch in Iran practically ended.

EMERGING CENTRAL ASIAN ISSUES — THE GEOGRAPHICAL AGENDA

G.M.Mir

The recent most model-based studies on global environment and sustainable development reveal some unpleasant findings. The figures predicted for the first half of the 21st Century pertaining to water scarcity, shrinking farmlands, bio-diversity reduction, higher temperatures and increasing acid rain are alarming. The first two variables are the relevant issue areas of Central Asia which should be addressed to on priority before its further deterioration. There are mainly two factors responsible for such a state of affairs, Central Asia's location and its political set-up.

Central Asia stretches from 28° 15' to 53° 30' north latitude and from 44° 10' to 119° 55' east longitude. It covers an approximate area of 9.5 million Sq. Km. i.e. above 33-88 percent of Asian continent, meaning thereby, over one-tenth of the global area.[1] It sprawls from Caspian sea in the west to Great Wall of China incidentally coinciding with 375 mm isohyet in the east, from Irtysh Divide in the north to Himalayas, Sulaiman range and Hindu Kush in the south. It comprises the five Central Asian states of Uzbekistan, Tadzhikistan, Turkemenia, Kirghiziya and Kazakhstan (members of CIS); Sinkiang and Tibet (within China); Outer Mongolia; Ladakh and Kashmir; NWFP of Pakistan, Afghanistan and Khorasan.

So in this paper an attempt has been made to highlight these regional problems i.e. water management and wasteland development, within its environmental framework with an emphasis on Planned Economic Group-I (Central Asian States) and P.E.G.-II (Sinkiang), constituting what earlier it was referred to as 'Turkestan.'

Regional Overview

The important relief features include large desserts, vast steppes, high mountains and oases crisscrossed by numerous rivers mostly of inland nature and some enclosed water bodies. The dominant desert expances are Gobi in Mongolia, Kara Kum in Turkemenia, Kyzyl Kum in Uzbekistan, Taklamakan in Sinkiang and Dasht-i-Kavir as well as Dasht-i-lut in Khorasan[2]. These deserts are traverssed by a number of rivers most of which after discharging some of their volume in irrigation, disappear in the sand. The two important such rivers are Amu (Oxus) and Syr (Jaxarates) considered the life lines of Central Asian states. The former originate from Vrevski glacier in southern Pamirs at an elevation of 5000 meters. Being the longest river of Middle Asia, 2600 km. in length with a catchment area of 465,000 Km^2 is joined by Vakhsh, Pyandzh, Surkhan and Zeravshan before it reaches the Aral sea. Syr Darya, the largest river by volume flows from Tien Shan. Before flowing into Aral, it drains some area, produces broad flood plains and is confluenced by Karanasi, Govasai and Chadksai as its right bank tributaries while Isfairamsal, Shakhimarden, Sokh, Isfara and Khadzhabakigan as its left bank tributaries. Other rivers of first and second order include Tarim with its tributaries like Yarkand, Khotan, Karamuran and Charchan in Sinkiang. Yarlungzangbo in Tibet, Indus and Jhelum in Indian sub-continent; Helmend and Hamun in Khorasan-Afghan region and Kerulen as well as Eden in Outer Mongolia are other worthmentioning streams.[3] In addition the dominant water bodies include Caspian sea, Aral Sea, Lopnor, Tengiz, Lepsy, Ubsanor, Kosogol etc.

The other geomorphological features comprise Middle and Central Asian mountains including Pamirs as well as Tienshan; NanShan (Eastern Sinkiang); Hindu Kush (Afghanistan); Trans-Himalayan ranges (Tibet); Kunlun (Sinkiang-Tibet); Astin tagh (Sinkiang); Kopet Dagh (Khorasan-Turkmenia); Altai (Sinkiang-northwest Mongolia); Greater Khingan (Eastern Mongolia); Sayan (Nothern Mongolia); Elburz (Northern

Khorasan) and Caucasus[4] (West Caspian system).

Water Management

The outstanding characteristics of Turkestan and the feature that most unifies it is "aridity" - a product of climate. Water -- not labour, capital or land, is essential economic resource here and the tragic part of it is that where-ever irrigation has been made possible with the already declining resources, it is faulty and mismanaged---threatening its existence as well as increasing the magnitude of wastelands.[5] The region is facing an environmental catastrophe mainly due to water drying up disaster which is evident from Aral sea and Tarim basin creating vast inland deserts. Aral, once the world's fourth largest inland water body has lost 60 percent of its volume since 1960. Its level has dropped by 50 feet and now exists only on 55 percent of its original area and 31 percent of its original volume.[6] The problem is that much of the melting snow of the source mountains tumbles down along two great mysterious rivers being drawn off for farming and other purposes mercilessly with a score of management faults. Every year the five Central Asian Republics drain off 11 Km^3 of water to support farming at the cost of Aral sea stable. The amount of river water now being siphoned off is already too small to maintain current level of farm output---barely supporting the existing population. At the moment these republics have only 0.2 hectares per capital irrigated land. In arid and semi arid areas 0.3 hectares is usually regarded as a bare minimum. Yet the region also has the fastest percentage annual growth of population i.e. 3.5. By 2010 the population will have doubled, while the per head water supply will have fallen by half, and that from a level that is already inadequate. The efficiency with which water is used can n't be increased dramatically certainly not doubled, and the diversion of Siberian rivers is not possible now all leading to a rare case of the region facing Malthusian disaster.[7]

The disintegration of USSR being considered a political earthquake and the combination of such aftershocks will (unless tackled properly) lead to political strife within the region mainly on two fronts: firstly, the potential for conflict between riparian states as most of the regional water sources are located in upstream republics of Kirghiziya and Tadjikistan. Moreover, the water rich republics are energy poor ones. The conflicts have surfaced from time to time with varying intensity and recently the Kirghiz government which has under its control enormous hydro-electric energy assets, has suggested that they should be able to sell water as Turkmenistan sells them oil and gas. The second possibility for confrontation can be based upon the connections between control of water and authoritarianism which will stir up conflicts between old-guard communists and their Islamic, nationalist and democratic challangers.[8]

Sinkiang contains within its borders two vast basins---Tarim and Dzungaria and a number of smaller basins, such as, Turfan, Ili etc. all of which have (with the exception of Ili) one feature common, namely, that they are all basins of inland drainage. Only one out of the many rivers finds an outlet to the sea i.e. Irtysh. More than half of Sinkiang is occupied by the Tarim river basin encircling Taklamakan desert. The river with its tributeries, keeping the oases, the links in the chain forming the ancient Silk Route, alive, are treated at par with the role of network of veins and arteries in blood circulatiuon for keeping humans alive. In Sinkiiang the total discharge of rivers is estimated at about 3400 m^3 per second. Schomberg contends that about one-half of Sinkiang's water runs waste throughout an irrigable year. If the available discharge could be stored up, the total supply of surface water will raise upto 107,283 million cubic meters a year. Thus, given efficient and economic use of water supply, the total land area that could be irrigated in Sinkiang would amount to 20 million acres i.e. about 10 times the existing figures. He goes so far as to assest that most of the Taklamakan desert is potentially cultivable and argues that sand dunes can be successfully stabilized elsewhere---on Cape Cod, for instance.[9]

Ellsworth Huntington and Sir Aurel Stein both comment at length that far out into the desert some 110-130 Km lower than the present limits of oases settlements, ruins of large villages and towns dating between AD 300 and 1200 are to be found. The remains of dead vegetation indicate a river flow three to four times greater at that time than today. The change is due to the change in climate and environment. But still hydrological sources are hopeful for plenty of underground water wealth, requiring its surveys, investment and proper utilization. Similarly, a rational water management policy in Tibet has to take into account the provision of irrigation to dry valleys as well as to overcome the waterlogging problem especially in the moist-forest zone.[10]

Wasteland Development

Wasteland is the land which has been damaged and has suffered degradation due to, inter alia, its over use, its wrong use and its uncared for state which result in eroded soils, salinity alkalinity, waterlogging, ravines and gully erosion as well as degraded forest land. It differs from virgin lands (like an ambitious project in erstwhile Soviet Central Asia) in the sense that the latter, generally speaking, can be brought under plough with little or no preliminary reclamation costs. A series of attempts have been made throughout the region under the banner of 'Wasteland Development Programme'[11] and the results are encouraging. Moreover, there is a wide scope for the improvement in the situation by exploring more and more water through modern devices and using it efficiently which in turn can go a long way in developing the wastelands. The Global 2000 report (Council on Environment Quality and Department of State, 1982:16), reflects that land under cultivation is projected to increase only 4 percent by 2000. In the early 1970 one hectare of arable land supported on average 2.6. persons; by 2000 one hectare will have to support 4 persons. So such predictions necessiate that the land which is degenerating and becoming unproductive must somehow be protected and rehabilitated and the land which is presently not in use or underused must be developed.

Devices and Techniques

The predictions of FAO are that by the year 2000 approximately 84 percent of the world's total farmland will rely on rainfull and will yield just over half of all crops (Biswas et al; 1983). Central Asia also has a wide scope for rainfed farming techniques which include improved catchments, vegetative hedges, dry farming, sparse and dry seeding, run-off retention by contour barriers, spray crops and intercropping (Domroes: 1979).

The irrigation techniques leading to minimum water loss should be applied so that the already existing salinity proglem[12] is not further deteriorated. However, the areas where salinity can't be avoided even after the application of reasonable expenditure, should be devoted to saltresistant crops. Some times it happens that we squander on importing expensive desalination technologies while the most suitable solution probably exists in the backyards. This is with the intention that the region should experiment some other species like 'Halophytes' or crops which grow in saline soils and whose systematic cultivation can not only help green wasteland to great extent, but also provide us with food, fuel, fodder, fibre, reins, essential oils and medicines.[13]

Plastic has an added value concept and has an essential role in wasteland development and water management. Conservation of water by lining of canals, reservoirs, ponds is possible with plastic film. Also there can be conveyance of water through plastic pipes. Drip irrigation has the advantage of saving 50-70 percent of water with agricultural yield rising up by 50 percent alongwith saving labour, fertilizers and power. The regional environment, to a large extent, can be protected through avoiding use of wood for packaging, using plastics instead[14].

The other techniques applicable for the region comprise reducing run off velocity by slope management, diversion channels and engineering structures.[15] Sprinkle irrigation is also recommended for the region but only for low volume closed spacing crops. Furthermore, the proper water laws be passed and the farmers be charged for water provision especially for irrigation purposes. The revenue received and the financial assistance extended by various countries as well as some international organisations should be spent on the development of the water resources in a priority-planned manner. Moreover, for planning water source a water shed/river basin is an ideal ecological unit (ecosystem) for management which presupposes a multi-national cooperative approach because watershed transcends national bounderies.

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